National Energy Board

Reasons for Decision

TransCanada PipeLines Limited

GH-R-1-92

June 1992

Blackhorse Extension

National Energy Board

Reasons for Decision

TransCanada PipeLines Limited

GH-R-1-92

June 1992

Cat. No. NE 22-1/1992-IIe
ISBN 0-662-19808-5

This report is published separately
in both official languages.

Copies are available on request from:

Regulatory Support Office
National Energy Board
311, Sixth Avenue S.W.
Calgary, Alberta
Canada
T2P 3H2
(403) 292-4800

Printed in Canada

Ce rapport est publié séparément
dans les deux langues officielles.

Exemplaires disponibles auprès du:

Bureau du soutien de la réglementation
Office national de l'énergie
311, 6e Avenue s.-o.
Calgary (Alberta)
Canada
T2P 3H2
(403) 292-4800

Imprimé au Canada

Recitals and Appearances

IN THE MATTER OF the *National Energy Board Act* and the regulations made thereunder; and

IN THE MATTER OF a review of the National Energy Board Decision GH-1-91 respecting an application by TransCanada PipeLines Limited pursuant to section 58 of the *National Energy Board Act* for the construction of a pipeline and associated facilities to provide new export service at Chippawa, Ontario; and

IN THE MATTER OF the National Energy Board Hearing Order GH-R-1-92;

HEARD at Niagara Falls, Ontario on 11, 12, 13 and 14 of May 1992 and at Calgary, Alberta on 20 and 21 May 1992.

BEFORE:

K.W. Vollman	Presiding Member
R.B. Horner, Q.C.	Member
R. Illing	Member

APPEARANCES:

R.B. Cohen E.P. Varga	TransCanada PipeLines Limited
T.G. Kane	ANR Pipeline Company
S.W. Widger, Jr.	Rochester Gas and Electric Corporation
D.G. Hart, Q.C.	St. Clair Pipelines Ltd.
A.S. Hollingworth M.A. Newton	Independent Petroleum Association of Canada
L.A. Hopkins	International Union of Operating Engineers, Local 17, Buffalo, New York
W. Calisina	Bissell Ltd.
J.H. Smellie C.W. Ulrich	CNG Transmission Corporation

J.H. Farrell	Consumers' Gas Company Ltd.
L.E. Smith S.R. Tweed	Enron Gas Marketing Inc. and Enron Power Services, Inc.
F.G. Hébert J.S. Bulger	Gaz Métropolitain, inc.
D.A. Holgate	Kamine Carthage Cogen Co., Inc., as Managing General Partner of Kamine/Besicorp Carthage L.P.
D.A. Holgate	Kamine Syracuse Cogen Co. Inc., as Managing General Partner of Kamine/Besicorp Syracuse L.P.
L.E. Smith N.M. Gretener	New York State Electric & Gas Company
M.M. Fabic	Niagara Mohawk Power Corporation
L. Keough	North Canadian Oils Limited
L.E. Smith	Sithe/Independence Power Partners, L.P.
N.J. Schultz W.D. Rapp	Tennessee Gas Pipeline Company
D. Davies	Unigas Corporation
G. Cameron	Union Gas Limited
P.C. Iribe	U.S. Generating Company
D. Watson	Can-Am Concerned Citizens
I.F. Kennedy	On her own behalf
A.F. Kroenig	On his own behalf
E. Hazlett	On his own behalf
L.L. Helwig	On his own behalf

M. Pfohl	On his own behalf
H. Rempel	On his own behalf
F.R. Foran, Q.C.	Alberta Petroleum Marketing Commission
C.M. Swanick	New York Coalition of Elected Officials on the Empire State Pipeline
M. Lampi	New York State Energy Office
J. Robitaille	Procureur général du Québec
D.J. Seeger	Town of Grand Island
T.W. Kuehn	Town of Wheatfield
M.A. Fowke	National Energy Board

Table of Contents

Recitals and Appearances			i
Table of Contents			iv
List of Tables			vi
List of Figures			vi
List of Appendices			vi
Abbreviations			vii
Overview			xi
1.	Background		1
2.	Review of GH-1-91 Decision		
	2.1	Scope of the Evidence to be Considered	2
	2.2	Expansion of the Niagara Line	4
	2.3	Undue Adverse Effects	8
	2.4	Market Strength	9
3.	Updated Section 58 Facilities Application		
	3.1	The Proposed Blackhorse Extension Facilities	11
	3.2	Empire Pipeline Facilities	11
4.	Supply Matters		
	4.1	Overall Supply	15
	4.2	Project Specific Supply	16
5.	Gas Market Requirements		
	5.1	Overall Market Requirements	20
	5.2	Project-Specific Requirements	22
6.	Transportation Arrangements and Financial Assurances		
	6.1	Transportation and Storage Service Arrangements	27
	6.2	Financial Assurances	34
7.	Facilities		
	7.1	Facilities Design	36
	7.2	Directionally Drilled Watercourse Crossings	37
8.	Routing and Land Matters		
	8.1	Early Public Notification	39
	8.2	Route Selection Criteria	40
	8.3	Route Selection Methodology	41
	8.4	Routing Alternatives	42
		8.4.1 Preferred Route	42
		8.4.1.1 Deviation/Changes in Construction Procedure	42
		8.4.1.2 Alternatives in the Study Area	47
		8.4.2 Comparison of the Alternative Routes	48

8.5 Land Requirements 49
8.6 Land 52
8.7 Requirements of the Act in Respect of the Routing of New Pipeline Facilities 52

9. Environmental Matters
9.1 Assessment Process 54
9.2 Environmental Matters 55
9.2.1 Directional Drilling 55
9.2.2 Watercourse Crossings 57
9.2.3 Soil and Agriculture 58
9.2.4 Vegetation 58
9.2.5 Woodlots 59
9.2.6 Archaeological and Heritage Resources 59
9.2.7 Other Concerns 59

10. Economic Feasibility 61

11. Tolling Matters
11.1 Tolling Methodology 64
11.2 Capacity Assignment 68

12. Disposition 70

List of Tables

3.1	Blackhorse Extension Estimated Cost of Facilities	13
3.2	Firm Service Requirements on the Blackhorse Extension	14
4.1	Gas Supply & Markets for Blackhorse Volumes	16
6.1	RG&E and Kamine Transportation Service Arrangements with TransCanada	28
6.2	Transportation Arrangements with Upstream and Downstream Pipelines	29
6.3	RG&E Transportation and Storage Service Arrangements with U.S. Pipelines	30

List of Figures

3-1	Proposed Blackhorse Extension & Empire State Pipeline	12
6-1	Union/TransCanada Facilities	32
8-1	TransCanada PipeLines Limited Alternative Routes	43
8-2	TransCanada PipeLines Limited Location of Deviations	45
8-3	TransCanada PipeLines Limited Details of Deviations	46
8-4	Proposed Land Requirements Blackhorse Extension Line 1700-1 MLV 1701 to the International Boundary	50

Appendices

I	List of Issues	73
II	Order XG-23-92	73
III	TransCanada's Undertakings to the Ontario Pipeline Coordination Committee and its Member Agencies	80
IV	TransCanada's Criteria for Evaluation of Alternative Routes	83

Abbreviations

Act	*National Energy Board Act*
ANR	ANR Pipeline Company
APMC	Alberta Petroleum Marketing Commission, The
Applicants	TransCanada, ANR, St. Clair and RG&E
Assessment Report	Environmental and Socio-Economic Impact Assessment Report
Bcf	billion cubic feet
Bcf/d	billion cubic feet per day
Blackhorse Extension or Blackhorse or the Extension	Proposed pipeline from TransCanada's Niagara Line near Thorold, Ontario to a delivery point near Chippawa, Ontario.
Board	National Energy Board
cogeneration shippers	Encogen, Fulton, Kamine Carthage, Indeck-Ilion and Indeck-Corinth
CNG	CNG Transmission Corporation
Consumers'	Consumers' Gas Company Ltd., The
CPA	Canadian Petroleum Association
DFO	Federal Department of Fisheries and Oceans
DOE/FE	U.S. Department of Energy/ Office of Fossil Energy
EARP Guidelines Order	Environmental Assessment and Review Process Guidelines Order
Empire or Empire State Pipeline	Empire State Pipeline Company, Inc.
Encogen	Encogen Four Partners, L.P.
Enron	Enron Gas Marketing Inc. and Enron Power Services, Inc.
Enserch	Enserch Development Corporation
ESA	Environmentally Sensitive Area

FERC	(United States) Federal Energy Regulatory Commission
FS	Firm Service
Fulton	Fulton Cogeneration Associates
GH-2-87	Hearing Order GH-2-87 in respect of TransCanada's application for 1988 and 1989 facilities and approval of toll methodology and related tariff matters.
GH-5-89	Hearing Order GH-5-89 in respect of TransCanada's application for 1991 and 1992 facilities
GH-4-90	Hearing Order GH-4-90 in respect of TransCanada's application for the Gananoque Extension
GH-1-91	Hearing Order GH-1-91 in respect of TransCanada's application for the Blackhorse Extension
GHW-2-91	Hearing Order GHW-2-91 in respect of Alberta Natural Gas Company Ltd.'s application for facilities
GH-4-91	Hearing Order GH-4-91 in respect of TransCanada's application for 1992 and 1993 Facilities
GMi	Gaz Métropolitain, inc.
Grand Island	Town of Grand Island, New York
Great Lakes or GLGT	Great Lakes Gas Transmission Limited Partnership
IGUA	Industrial Gas Users Association
Indeck-Corinth	Indeck Gas Supply Corporation-Corinth
Indeck-Ilion	Indeck Gas Supply Corporation-Ilion
IPAC	Independent Petroleum Association of Canada
IPL	Interprovincial Pipe Line Inc.
Iroquois or IGTS	Iroquois Gas Transmission System
Kamine	Kamine Carthage and Kamine Syracuse

Kamine Carthage	Kamine Carthage Cogen Co., Inc., as Managing General Partner of Kamine/Besicorp Carthage L.P.
Kamine Syracuse	Kamine Syracuse Cogen Co., Inc., as Managing General Partner of Kamine/Besicorp Syracuse L.P.
km	kilometre(s)
LDC	local distribution company
LNG	liquefied natural gas
m	metre(s)
m^3/d	cubic metres per day
Mark Resources	Mark Resources Inc.
mm	millimetre(s)
MMcfd	million cubic feet per day
MW	megawatt(s)
National Fuel	National Fuel Gas Supply Corporation
NCM	North Canadian Marketing Inc.
NCO	North Canadian Oils Limited
NGA	Natural Gas Act (United States)
Niagara Mohawk or NIMO	Niagara Mohawk Power Corporation
Niagara Pipeline	Niagara Pipeline Limited
NOVA	NOVA Corporation of Alberta
NYSEG	New York State Electric & Gas Company
NYSEO	New York State Energy Office
NYPSC	New York State Public Service Commission
O.D.	outside diameter
OEB	Ontario Energy Board

OMOE	Ontario Ministry of the Environment
OMNR	Ontario Ministry of Natural Resources
OPCC	Ontario Pipeline Coordination Committee
OWMC	Ontario Waste Management Corporation
Québec	Procureur général du Québec
QEW	Queen Elizabeth Way
Renaissance	Renaissance Energy Ltd.
RH-3-86	Hearing Order RH-3-86 in respect of an application by TransCanada for new tolls
RG&E	Rochester Gas and Electric Corporation
Rules	*National Energy Board Rules of Practice and Procedure*
Sithe	Sithe/Independence Power Partners, L.P.
Sithe/Enron	Sithe/Independence Power Partners, L.P. and Enron Gas Marketing Inc. and Enron Power Services, Inc.
St. Clair	St. Clair Pipelines Ltd.
Tennessee	Tennessee Gas Pipeline Company
TransCanada	TransCanada PipeLines Limited
TransGas	TransGas Limited
Unigas	Unigas Corporation
Union	Union Gas Limited
U.S.	United States of America
U.S. Generating	U.S. Generating Company

Overview

(NOTE: This overview is provided solely for the convenience of the reader and does not constitute part of this Decision or the Reasons, to which readers are referred for the detailed text and tables.)

Background

A public hearing was held in Niagara Falls, Ontario on 11-14 May 1992, and in Calgary, Alberta on 20-21 May 1992, to review the July 1991 Decision ("GH-1-91") of the Board that denied an application by TransCanada PipeLines Limited ("TransCanada") to construct a pipeline, known as the Blackhorse Extension, in southern Ontario.

The proposed facilities, estimated to cost $39.1 million, would involve the construction of a 20.6 kilometre (12.8 mile) pipeline extending from the Blackhorse Meter Station near Thorold, Ontario to a new export point at Chippawa, Ontario. At that point, the Blackhorse Extension would interconnect with the proposed facilities of the Empire State Pipeline Company, Inc. ("Empire") in the United States. The facilities would allow Canadian and U.S. gas supplies to be delivered to the New York State market. The firm commitments underpinning the expansion total 5750 $10^3m^3/d$ (203 MMcfd), with a scheduled in-service date of 1 November 1993.

Review of GH-1-91 Decision

In its July 1991 Decision, the Board had found that the proposed Empire markets could be served in a timely fashion by less expensive and environmentally superior means. However, the alternatives considered by the Board at that time no longer appear to be viable. First, the Tennessee and CNG proposals envisaged by the Board as alternatives to the Blackhorse project have been rejected by American regulators, and no new applications have been forthcoming. Second, despite the Board's earlier Decision, the Blackhorse/Empire customers and U.S. Federal and New York State regulatory and energy policy agencies have made it clear through their subsequent actions that they desire an independent, alternative source of gas supply. Putting one of the existing U.S. pipelines in control of part of the transportation route is not compatible with that objective.

Further, in GH-1-91 the Board had found no indication that any party would be unduly adversely affected by the denial of the proposed Blackhorse facilities. Subsequent events indicate that Canadian natural gas sales revenue has been reduced or lost and other sales of Canadian gas put at risk.

The Board's July 1991 Reasons also indicated concerns about the strength of the western and central New York State market. The evidence heard in the GH-R-1-92 hearing points to a potentially increased market demand for natural gas, and increased requirements for service on Blackhorse above the firm volumes underpinning the application.

In the light of these new facts and changed circumstances, the Board has decided to set aside the GH-1-91 Decision and to re-examine the section 58 Blackhorse Extension application.

Supply

Twenty-three percent of the start-up volumes will originate in Western Canada, and are dedicated to specific projects by Renaissance Energy Ltd., North Canadian Marketing Inc., and Unigas Corporation/Mark Resources Inc. The remaining seventy-seven percent of the supply relates to Rochester Gas and Electric Corporation ("RG&E")'s short haul requirements, and is currently uncontracted. RG&E proposes to purchase this supply under a portfolio arrangement from a variety of supply basins, and move it into storage in Michigan on a year round basis. The portfolio would be comprised of gas supply contracts with three, five and seven year terms. RG&E has contracted for storage capacity and transportation on upstream pipelines for 15 years.

The Board was not prepared to accept RG&E's storage and transportation contracts as a proxy for supply and required TransCanada to file executed supply contracts prior to the commencement of construction. Furthermore, since the term of these RG&E supply contracts is less than what TransCanada would usually require, the Board has decided to place TransCanada at risk for any unrecovered demand charges which might occur during the first 15 years of the project.

Market

The Applicants demonstrated market demand through evidence on overall energy supply and demand projections, project specific requirements, and a list of "bullpen" projects that were in its queue and requesting service as early as 1 November 1993. The *1991 New York State Energy Plan*, which forecast a growth in gas demand of 32 percent between 1990 and 2010, was said to be conservative, particularly in light of current trends in the use of gas for power generation. The Board was satisfied that TransCanada had demonstrated a market for gas to be moved on Blackhorse.

Transportation Arrangements and Financial Assurances

The Board accepted TransCanada's evidence that all required transportation contracts, including those with respect to upstream and downstream systems were in place for RG&E, Kamine Carthage Cogen Co. Inc., and Kamine Syracuse Cogen Co. Inc. With respect to financial assurances, TransCanada stated that it did not require any from RG&E. With respect to Kamine, TransCanada has secured a performance agreement on financial assurances whereby the Kamine cogeneration projects have undertaken to provide TransCanada, prior to TransCanada executing a transportation contract, a letter of credit (or its equivalent) for one year of demand charges. As stated in previous decisions, the Board believes that TransCanada is in the best position to assess the risks associated with the individual projects underpinning the facilities expansion and in particular, to determine the risk associated with the recovery of demand charges. Furthermore, the Board believes that TransCanada should continue to retain the right to determine the need for and type of financial assurances package.

The Board also approved an increase in TransCanada's M-12 firm transportation entitlements on Union to facilitate RG&E's short haul requirements from St. Clair to Chippawa.

Facilities

The proposed facilities comprise an upstream 6.3 MW compressor, 20.6 km (12.8 miles) of pipe and a meter station at Chippawa, Ontario. TransCanada examined pipe diameters of 508 mm (20 inch) and 610 mm (24 inch), and concluded that the larger size was required in order to maintain existing capacity on the Niagara Line, and to provide for growth on the Blackhorse Extension. The entire line was designed to CSA Class 3 standards. The Board accepted TransCanada's facility design.

TransCanada has proposed the use of directional drilling for three watercourse crossings along the proposed route, the most significant being the crossing of the Chippawa Channel of the Niagara River, to be implemented by ANR. While the Board supports the choice of this technology, the Board has concerns regarding the thoroughness of the Applicants in preparing for the use of this technology. The Board has therefore accepted undertakings and conditioned the order to address these concerns.

Land Use and Environmental Matters

The specific route proposed by TransCanada would follow existing rights-of-way for over 80 percent of its length, deviating over the remaining portions to accommodate environmental, landowner or technical concerns. At the conclusion of the hearing, TransCanada had reached agreements with all landowners except six. Of these six, five were said to have agreed in principle. TransCanada submitted that there was no need for a subsequent detailed route hearing and, in light of the route detail examined during the hearing, and the opportunity afforded landowners to express concerns and the lack of opposition from municipal and provincial authorities, the Board agreed with this request on condition that no landowner rights would be prejudiced.

With respect to environmental mitigation, TransCanada had consulted with all appropriate authorities and agreed to a number of specific commitments to address concerns raised by these agencies. Directional drilling was proposed by TransCanada to further mitigate the adverse environmental effects of crossing the Chippawa Channel, the Welland River and Lyons Creek. In response to concerns raised by the Board, TransCanada made several commitments to address potentially adverse environmental effects, including any directly related social effects of the directional drilling activities. The Board accepted these commitments and added four further conditions relating to drilling mud disposal and monitoring various effects from the directional drilling.

Economic Feasibility

The Board determined economic feasibility by assessing the likelihood of the facilities being used at a reasonable level over their economic life, and the likelihood of demand charges being paid. In addition to supply, markets and transportation, the Board examined: contractual arrangements and the financial integrity of the signing parties; the status of other regulatory approvals; potential competition; project risks; and the impact of any toll increases. The Board concluded that, while the Blackhorse Extension would promote additional gas-on-gas competition, the project was economically feasible.

Tolls

The Board found that rolled-in tolls are appropriate for the Blackhorse Extension because the facilities will be part of TransCanada's integrated system and they will provide a standard service.

The Board also decided that the costs associated with TransCanada's increased firm transportation entitlements on Union should be recovered in rolled-in tolls.

Environmental Screening

The Board conducted an environmental screening of the applied-for facilities in compliance with the *Environmental Assessment and Review Process Guidelines Order* insofar as there was no duplication with the Board's own regulatory process. The screening was conducted concurrent with the GH-1-91 proceeding and was updated as a result of new information submitted in the GH-R-1-92 proceeding. The Board determined that the potentially adverse environmental effects, including the social effects directly-related thereto which may be caused by the proposal, and using directional drilling to cross the Chippawa Channel of the Niagara River, would be insignificant or mitigable with known technology.

Order XG-23-92

The Board concluded that the applied-for facilities were in the public interest. Accordingly, the Board has issued, pursuant to section 58 of the *National Energy Board Act* ("the Act"), Order XG-23-92 conditionally exempting TransCanada from the provisions of paragraph 30(1)(a), and sections 31 and 33 of the Act in respect of the Blackhorse facilities.

Chapter 1

Background

In a Decision issued on 4 July 1991, the National Energy Board ("the Board") denied an application dated 20 July 1989 from TransCanada PipeLines Limited ("TransCanada"), pursuant to section 58 of the *National Energy Board Act* ("the Act"), to construct a pipeline and associated facilities to provide new export service at Chippawa, Ontario (the "Blackhorse Extension").

The proposed facilities, estimated to cost $39.1 million, would involve the construction of a 20.6-kilometre (12.8 miles) pipeline extending from the Blackhorse Meter Station near Thorold, Ontario to a new export point at Chippawa, Ontario. The facilities would allow TransCanada to provide export service to facilities proposed by Empire State Pipeline Company, Inc. ("Empire" or "Empire State Pipeline") which would in turn provide service to customers in western New York.

On 2 August 1991, TransCanada, ANR Pipeline Company ("ANR"), Rochester Gas and Electric Corporation ("RG&E") and St. Clair Pipelines Ltd. ("St. Clair") (together, "the Applicants") filed an application, under section 21 of the Act, seeking review of the Board's Decision of 4 July 1991. The Board indicated its intention to review its previous Decision in a letter dated 9 August 1991. The Board's decision to review was later struck down by the Federal Court. In a letter dated 12 November 1991, the Board solicited comments from interested parties on the need to review. After reviewing those comments and subsequent reply by the Applicants, the Board issued a letter dated 9 January 1992 informing parties of its intention to conduct the review in an oral proceeding.

For its hearing, the Board directed that it would incorporate, by reference, the record from the 1991 Blackhorse Hearing ("GH-1-91") and hear evidence to update that record. Parties filing an intervention in the 1991 proceeding were automatically considered intervenors in the review process unless they chose to notify the Board otherwise. In a letter dated 25 February 1992, the Board indicated that the threshold question to be determined at the hearing was the correctness of the Board's Decision in GH-1-91.

A pre-hearing public information session was held in Niagara Falls, Ontario on 7 April 1992 to assist parties new to Board proceedings in their understanding of the hearing process.

The evidentiary portion of the hearing was heard in Niagara Falls, on 11-14 May 1992 and argument was heard on 20 and 21 May 1992 in Calgary, Alberta.

Review of GH-1-91 Decision

2.1 Scope of the Evidence to be Considered

The Applicants argued that the Board must consider all the evidence on the record relating to all items on the list of issues in making a determination on the correctness of the GH-1-91 Decision. TransCanada took the position that a review under section 21 of the Act must relate to another section of the Act which in this case is the section 58 application. It argued that the Board's ultimate Decision to deny the section 58 application was influenced by the conclusions enumerated in the GH-1-91 Decision. Therefore, TransCanada argued that, in examining the threshold question of whether to overturn the earlier Decision, the Board must consider all evidence in the review proceeding which relates to these conclusions.

ANR argued that the power to review is discretionary and in that light examined the *NEB Rules of Practice and Procedure* ("the Rules"). Given that the grounds for review enumerated in the Rules are not exhaustive, the Board could look at all relevant changed circumstances in re-opening the hearing.

St. Clair stated that while the Federal Energy Regulatory Commission ("FERC") denial of the Tennessee Gas Pipeline Company ("Tennessee") and CNG Transmission Corporation ("CNG") expansion proposals is a material, indeed fundamental, change in circumstances, it is not the only factor that the Board should consider in reaching a determination on whether to overturn the GH-1-91 Decision. It argued that the Board must be satisfied that the Blackhorse facilities are required, as it held the view that to reverse or overturn the denial, would be to grant the approval. St. Clair argued that the grounds for reversing the denial and the evidence relied upon to support those grounds, are the same grounds and evidence which justify the approval.

New York State Electric & Gas Company ("NYSEG") supported the Applicants' argument that the entire evidentiary record should be relied upon when examining the issue of whether to overturn the Board's original Decision and specifically pointed to evidence relating to increased market demand as being relevant.

North Canadian Oils Limited ("NCO") argued that there is no basis on which the Board could or should ignore the new evidence placed on the record in the determination of the question of whether to overturn the original Decision. It further argued that it would be inappropriate for the Board to constrain itself with regard to the evidence it considers in this matter.

Kamine Carthage Cogen Co., Inc., as Managing General Partner of Kamine/Besicorp Carthage L.P. ("Kamine Carthage") and Kamine Syracuse Cogen Co., Inc., as Managing General Partner of Kamine/Besicorp Syracuse L.P. ("Kamine Syracuse") (together, "Kamine") took the position that, although there are a number of changed circumstances since the Board's original Decision, the Board need look no further than to the fact that the FERC has denied the Tennessee alternative and approved the Empire pipeline. That fact justified a review of the Board's Decision in GH-1-91.

The Alberta Petroleum Marketing Commission ("APMC") also argued that the FERC Decision, which reflects the market's rejection of the Tennessee and CNG alternatives, is the prime changed circumstance or new fact to which the Board should have regard in considering whether to overturn the GH-1-91 Decision. It argued that the FERC Order is a significant new fact that satisfies the threshold question and, therefore, justifies the Board proceeding to examine all other issues.

CNG took the position that the evidence heard in connection with issues 1 to 11 on the List of Issues, concerned with the section 58 case, should not be considered pertinent to the critical threshold issue, but should only be considered in the event that the Board overturns its original Decision. CNG argued that the power to review is a discretionary one and should be exercised sparingly. In its view, the Applicants bear the onus of demonstrating that the GH-1-91 Decision is clearly incorrect.

CNG argued that the necessary element or basis for the Applicants' section 21 application is the FERC Decision of 9 July 1991, as this renders the GH-1-91 Decision incorrect by denying the regulatory authorization necessary for alternative U.S. means of serving the proposed market. CNG pointed out that, absent the FERC Decision, the GH-R-1-92 hearing would not have occurred and it therefore took the position that there is only one piece of evidence that is pertinent and relevant to the Decision on the threshold issue, that being the FERC Decision itself. It maintained that the evidence on the rest of the record is only pertinent and relevant and can only be considered if the Board decides that the GH-1-91 Decision is clearly incorrect. However, CNG also argued that if the Board considers other evidence which may bear, in part, on the correctness of the Board's Decision, the Board must consider to what extent, if any, this evidence is in any material respect qualitatively different from that which was heard in GH-1-91 and whether such evidence overcomes the burden on the Applicants of demonstrating that the GH-1-91 Decision was clearly incorrect.

The Town of Grand Island also argued that the FERC Decision is the material change upon which the Applicants were relying in requesting the review.

Views of the Board

The Board recognizes that it has broad powers under the Act to review and that it has a duty to consider all evidence relevant to the issue of whether to overturn its Decision. Further, the Board must not fetter its discretion by refusing to examine evidence which is relevant to the question at hand. In the Board's view, any review must relate back to the original Decision which is the subject of the section 21 application and, therefore, the relevant evidence is all evidence which addresses the correctness of that Decision. In this case, that includes all evidence relating to the Board's findings in the Decision chapter of the GH-1-91 Reasons for Decision. Accordingly, it is the Board's view that it is not restricted to looking only at the FERC Decision denying the Tennessee and CNG applications and granting the Empire application, nor must it look at evidence on the record not relevant to this issue, in deciding this matter.

In the GH-1-91 Decision, there were three main findings which led the Board to deny TransCanada's application:

- The proposed markets could be served in a timely fashion by less expensive and environmentally superior means through expansion of TransCanada's existing Niagara Line. The Board was persuaded that Tennessee was willing and able to accommodate the service requirements by 1 November 1992.

- There was no indication that any party would be unduly adversely affected by the denial of the proposed facilities.

- There was no basis for TransCanada's contention that exports at Niagara would continue to increase in the future at the same rate experienced in the previous few years.

2.2 Expansion of the Niagara Line

In the GH-1-91 Decision, the Board found that there was clear evidence that the proposed markets could be served in a timely fashion by less expensive and environmentally superior means through expansion of TransCanada's existing Niagara Line. Furthermore, the Board was persuaded by Tennessee's evidence that it would be able to provide service by 1 November 1992.

The Applicants argued that this finding by the Board has been proven incorrect. They pointed out that the evidence has demonstrated that the markets do not want service from Tennessee, but want to pursue the Empire alternative, and that Tennessee admitted that the FERC rejected the Niagara Alternative because it had no market support. It was submitted that RG&E and the other Empire shippers are looking for a competitive alternative to the Tennessee and CNG systems. Further, the Applicants noted that providing competition for the western and central New York market is the policy decision of the relevant U.S. regulatory agencies and the basis for their authorization of the Empire system. The Applicants noted that despite Tennessee's campaign to attack Empire's market, Tennessee has been unable to attract any customers from Empire and that any movement away from Blackhorse to the Niagara Spur Loop Line has been to National Fuel Gas Supply Corporation ("National Fuel") and not to Tennessee. Thus, the Applicants argued that Tennessee does not have the requisite market support now, nor will it have in the foreseeable future.

To provide a competitive service, in the Applicants' view, Empire requires an independent pipeline without an intermediary pipeline between it and TransCanada. The Applicants argued that this independent pipeline cannot be dependent on the co-operation of competitors. The Applicants submitted that to allow Tennessee, with its monopoly, to control a would-be competitor is not acceptable to the Empire sponsors, as this would not achieve competition but would further entrench the Tennessee/CNG monopoly position.

The Applicants further argued that the most Tennessee could offer would be interruptible transportation; the Tennessee proposal has never offered sufficient year-round service to meet the requirements of the market. In the Applicants' view, a Tennessee interconnection with TransCanada is meaningless given that there is no firm capacity downstream.

Finally, on this issue, the Applicants argued that even if Tennessee were willing to serve RG&E and the Empire shippers, there remained the issue as to whether Tennessee would be able to do so in a timely manner. Tennessee would have to file with the FERC for additional facilities which it has not done, nor will it until a shipper files a precedent agreement. The market has indicated that it has no intention of doing so. Furthermore, an application to the FERC would be necessary to shorten the Empire line to connect with Tennessee, and the Applicants argued that this process would take so long as to render the 1 November 1993 predicted in-service date totally without foundation. The Applicants took the position that a viable alternative requires willing buyers, sellers and transporters as well as regulatory and contractual action to put all of the pieces into place.

The Applicants argued that events since the release of the GH-1-91 Decision have indicated that Tennessee is not able to accommodate customers at all, much less in 1992.

The Independent Petroleum Association of Canada ("IPAC") argued that Tennessee's position that it would apply for facilities if it were given an indication of market support is an acknowledgement by Tennessee that it will not get approval from the FERC unless it can demonstrate contractual underpinning for the proposed project. IPAC pointed out that there are numerous regulatory requirements to be completed before a Tennessee alternative could be viable, and none of these have been met. Similarly, Kamine and Sithe/Independence Power Partners, L.P. (Sithe) and Enron Gas Marketing Inc. and Enron Power Services, Inc. ("Enron") (together, "Sithe/Enron") argued that the Tennessee alternative no longer exists and is not likely to come into existence.

NCO argued that the Niagara alternative is so incomplete that if it were filed with the Board as a facilities application the Board would not even set it down for hearing as it does not satisfy any criteria that the Board uses to assess facilities applications. NCO also noted that Tennessee acknowledged that its proposal would create a bottleneck that would not allow the firm service contracted on both upstream and downstream pipelines to be available each and every day of the year.

Unigas Corporation ("Unigas") submitted that as buyers have not switched over to the Tennessee/CNG line since the GH-1-91 Decision, it makes little sense to expand TransCanada's existing Niagara Line in order to connect to a U.S. pipeline that no one wants to use. Unigas also argued that the Board seemed to be considering an "either/or" scenario in GH-1-91 with respect to the Blackhorse and Niagara lines, but given the evidence that there will continue to be significant increases in natural gas demand in New York State, there is clearly a need for additional pipeline capacity between Canada and the U.S. Therefore, it is likely that not only will Blackhorse be required, but also expansion on the Niagara Line. Unigas argued that Tennessee was not an acceptable alternative and that the only alternative available to Unigas was to relinquish an attractive market it has worked hard to obtain.

NYSEG argued that prior to contracting with Empire it negotiated with CNG and Tennessee but was unable to obtain the competitive type of service it required. NYSEG supported the position taken by the New York State Energy Office ("NYSEO") in evidence that the proposed facilities will preserve expansion at the Niagara export point for a time when the market requires that service.

CNG, Tennessee, Mr. Helmut Rempel and the Town of Grand Island, New York ("Grand Island") all argued that the original Decision of the Board in GH-1-91 was correct and should not be overturned.

CNG argued that the Applicants' position is that the proposed alternative U.S. facilities (involving CNG and Tennessee) underpinned the GH-1-91 Decision. It would then follow that once those alternatives were dismissed by the FERC, the underpinning of the decision for the Canadian facilities ceased to exist and the GH-1-91 Decision would therefore be in error.

CNG found numerous errors in applying the FERC Decision to the threshold issue. It argued that if the Board did not know what the U.S. Decision would be (as the Applicants have asserted), then it could not be an underpinning to the Board's Decision. Further, the Board indicated at the outset of GH-1-91 that it would not look at specific routes in the U.S. and, therefore, a party cannot now claim that specific U.S. facilities underpinned the Blackhorse Decision. Therefore, CNG argued that it was not the FERC Decision which underpinned the Board's Decision but a finding of an environmentally superior and less costly method of transporting the gas to market.

CNG argued that Tennessee is able to receive the deliveries at the border without further action by the FERC, and that approvals needed to expand the facilities in order to move the volumes away from Niagara could, in the appropriate circumstances, be expected to be issued in a reasonably brief period, perhaps less than six months. Further, it argued that the only impediment to a renewed Tennessee application is the unwillingness of Empire and its proposed shippers to seek transportation service from Tennessee. Grand Island submitted that the FERC would almost certainly approve a TransCanada/Empire proposal to import gas through the Lewiston facilities if such an application were made.

CNG rebutted the Applicants' argument that Tennessee lacks the regulatory approvals to provide service by pointing out that Empire itself lacks certain necessary approvals such as that from the U.S. Army Corps of Engineers. Tennessee argued that the FERC denial of its proposal is no more of an impediment to its project than is the decision of the U.S. Army Corps of Engineers to dismiss Empire's application.

CNG and Tennessee pointed out that the Board's Decision stated that downstream transportation could be effected by either Tennessee or National Fuel and that the Board's judgement has been proven correct with respect to National Fuel providing service to at least some cogeneration projects.

With respect to the argument that there is a need for competition, CNG argued that it was the agreement between TransCanada and Union Gas Limited ("Union"), pursuant to which TransCanada became obliged to apply for the Blackhorse facilities, which forms the basis for the application. This, it argued, has more to do with the commercial interests of the sponsors of Empire than a true need for competition. Tennessee argued that the agreement resulted in coordination, not competition. Further, CNG countered the argument about the monopolistic position of U.S. interstate pipelines such as CNG and Tennessee by stating that both are open access pipelines, providing competitive services, fully consistent with the FERC and U.S. energy policy. Tennessee indicated that it remains willing and able to accommodate certain of the Empire service requirements.

CNG, Tennessee and Mr. Rempel all argued that the evidence clearly shows that TransCanada's Niagara Line is able to accommodate the volumes underpinning the Blackhorse Extension and at considerably less cost. CNG pointed out that building Blackhorse will not add appreciably to TransCanada's overall export capacity into the U.S. It noted that there was little or no evidence discussing the environmental impacts of building the Blackhorse Extension; impacts which would be avoided with expansion of the Niagara Line. Tennessee also noted that nothing has changed on the environmental issue since the last hearing.

Tennessee argued that the only reason the Applicants are not proposing transportation along the Niagara route, which remains the economically and environmentally superior route, is because of the agreement between Union and TransCanada. It pointed out that TransCanada's contractual obligation to Union does not bind the Board. Tennessee further argued that the Board's Decision on the Canadian public interest did not turn on whether or not any pipeline downstream of Lewiston had an application pending before any regulatory body, nor whether the FERC or any other regulatory body had authorized construction and operation of the necessary facilities downstream of Lewiston.

In Tennessee's view, to indicate that the underpinning for the Board's Decision was the FERC approval of the Niagara Alternative is tantamount to saying that a finding on the American public interest determines the Canadian public interest in the routing of pipelines. It noted that the Board has never taken this view. Both Tennessee and CNG argued that contrary to this, the Board has found, for instance in the Gananoque Extension Decision (GH-4-90), that the facilities applied for were not in the Canadian public interest even though American authorities had approved the connecting facilities on that side of the border.

Tennessee argued that there is ample time before the 1 November 1993 in-service date for parties to pursue other alternatives, and noted that parties could have pursued such alternatives in the year following the Board's Decision.

Mr. Rempel argued that the expansion of under-utilized facilities, creating duplicative service, is not practical, cost-effective nor in the Canadian public interest.

Views of the Board

In its July 1991 Decision, the Board found that the proposed Empire market could be served in a timely fashion by less expensive and environmentally superior means. However, the main alternative considered by the Board, the Tennessee or Niagara Alternative, no longer appears to be viable.

Although the Board does not consider the FERC Decision to be determinative of whether the Board's Decision should be overturned, it notes the findings of that body which rejected the Tennessee and CNG alternatives, and authorized the Empire facilities. The Board also notes that there has been no subsequent filing by Tennessee requesting approval of facilities. While the Board does not dispute that Tennessee might make an application to the FERC if it were to receive service requests, the Board does not foresee Tennessee obtaining the market support necessary to make such a filing. Furthermore, the Board is not convinced that all necessary regulatory approvals for the Niagara Alternative could be obtained in time to meet the 1 November 1993 in-service date.

The Board has heard substantial evidence on the desire of the Empire shippers and regulatory and energy agencies in the U.S. to achieve competition by the establishment of an independent alternative source of gas supply and transportation. The Board notes that the actions of RG&E and other Empire shippers have been consistent with this position. The Board is of the view that putting one of the existing U.S. pipelines in control of part of the transportation route is not compatible with that objective.

2.3 Undue Adverse Effects

The Board found in GH-1-91 that there was no indication that any party would be unduly adversely affected by the denial of the proposed facilities.

Numerous parties pointed to IPAC's evidence which indicated that the Decision in GH-1-91 had adversely affected Canadian producers and marketers as shippers have turned to U.S. supplies. IPAC estimated that there has been $50 million in lost sales revenue of Canadian gas and projected future losses in the range of $60-$90 million.

The Applicants also noted that even when the sale was not lost, there were situations where the producer was forced to accept a reduced price, and where numerous producers have faced delays in firming up transportation for gas supply. They argued that U.S. customers will reject Canadian gas if the Blackhorse application is denied again, and this would be accentuated by the fact that both Tennessee and CNG have alienated the market by their monopolistic position. They further argued that the constraints exercised by CNG and Tennessee prevent the transportation rate competition that would come with a new pipeline. This competition would help make Canadian supplies more attractive in the market by reducing the transportation component of total delivered cost and allowing Canadian producers to realize any improvement in their margins on the sales that they are able to make.

RG&E submitted that if the Board's consideration of adverse effects was limited only to the question of whether the prospective shipper would be able to receive gas as a result of the GH-1-91 Decision, then it could not claim that any harm was suffered. However, RG&E argued that it was unduly adversely affected by the denial of the Blackhorse application by having its efforts to diversify its transportation and sources of supply thwarted and because it had incurred costs to fill storage and order pipe and equipment.

Unigas cited the IPAC evidence that indicated that as the upstream sector of the oil and gas industry is in poor financial health, producers require the ability to compete for attractive new markets. In Unigas' view, Blackhorse would improve the ability to access those markets at a time when increased transportation and marketing flexibility is critical to the long-term health of the Canadian producing industry.

Mr. Rempel pointed out that concerns about lost gas sales could also be referred to as delayed sales, as the gas is still available.

Grand Island argued that Empire steered the FERC into approving an import point at the terminus of the Blackhorse Extension by applying for only that import point when it could have just as easily obtained the FERC authorization to import elsewhere. Grand Island therefore submitted that this self-created hardship should not be considered a matter of change in circumstances warranting reversal of the Board's Decision.

Views of the Board

The Board accepts the evidence of IPAC which indicated losses and delays in sales of Canadian gas to this market, with resulting losses in revenues to Canadian producers, as a result of the Board's Decision to deny the Blackhorse facilities.

2.4 Market Strength

In the GH-1-91 Decision, the Board found no basis for TransCanada's contention that exports at Niagara would continue to increase at the same rate experienced in the past few years.

The Applicants and numerous other parties pointed to the evidence of Mr. Hughes, consultant for ANR, and Mr. Scott of the New York State Energy Office, which indicated that the market is even larger than was estimated a year ago, and in particular, that the size of the potential cogeneration market has nearly doubled since GH-1-91.

The Applicants pointed out that volumes under precedent agreements with Empire are also larger now than identified at the original hearing. Further, TransCanada stated that its forecast of export deliveries through the Kirkwall Line for 1993-94 has increased six percent from projections made a year ago in GH-1-91.

The Applicants therefore argued that growth projections are sufficient for both the Blackhorse and Niagara Lines.

Tennessee argued that the Board's conclusion was not a negative finding about the strength of the market but rather, was a finding about the alleged environmental benefit of constructing the Blackhorse Extension. It submitted that the Board made no finding on the markets.

Views of the Board

The Board cannot agree with Tennessee that the finding regarding the growth of exports at Niagara was only in relation to the environmental benefits of the Blackhorse Extension and not to the markets. The Board is of the view that in GH-1-91, a finding was made that adding compression on the Niagara Line would be sufficient to meet the requirements of the market because it found there would not be the same rate of growth as experienced in the previous years.

The Board is satisfied that the evidence demonstrates a potential for an increased market demand for natural gas, and increased requirements for service on the Blackhorse Extension above the 5750 $10^3m^3/d$ (203 MMcfd) underpinning the application.

The Board has decided that the above-noted considerations demonstrate that there are changed circumstances and new facts since the date of the Board's Decision in GH-1-91 which warrants setting aside that Decision and re-examining the section 58 Blackhorse Extension application.

Decision

In the light of new facts and changed circumstances, the Board has decided to set aside the GH-1-91 Decision and consequently re-examine the section 58 Blackhorse Extension application.

Updated Section 58 Facilities Application

3.1 The Proposed Blackhorse Extension Facilities

TransCanada has proposed the construction of a single 610 mm (24 inch) O.D. line called the Blackhorse Extension which would tie-in to existing facilities on its Niagara Line near the Blackhorse Meter Station (see Figure 3-1). The pipeline would extend approximately 20.6 km (12.8 miles) to connect with the proposed Empire State Pipeline in the United States at Grand Island, New York. New metering facilities would be constructed near the Canada/U.S. border. The Niagara River crossing would be constructed by Empire. Included in the proposal is the installation of an additional compressor unit at Station 1301 near Kirkwall, Ontario.

The total estimated cost of the proposed facilities in 1992 dollars is $39.1 million. Table 3-1 summarizes the proposed facilities and their associated costs. Table 3-2 illustrates the Blackhorse Extension peak-day requirements, forecast annual throughputs and contract durations. TransCanada projects an in-service date of 1 November 1993 to coincide with completion of the proposed Empire system.

In its application, TransCanada has also requested approval for increased firm transportation entitlements of 4433 $10^3m^3/d$ (156.5 MMcfd) on Union's system, corresponding to volumes in RG&E's contracts with TransCanada for firm service from St. Clair to Chippawa commencing 1 November 1993.

3.2 Empire Pipeline Facilities

The proposed Empire system (see Figure 3-1) is a 248 km (155 mile), 610 mm (24 inch) O.D. pipeline which would commence at Grand Island, New York on the Canada/U.S border and terminate at a point near Syracuse, New York. No compression facilities would be required initially for the Empire system which would be intended to transport requirements of 5750 $10^3m^3/d$ (203 MMcfd).

Subsidiaries of Union Energy, Inc. and The Coastal Corporation (St. Clair Pipeline Company, Inc. ("St. Clair") and ANR respectively) would be equal owners of the Empire facilities. Upon receipt of all regulatory approvals, RG&E could acquire a 20 percent interest in the Empire project from St. Clair.

Figure 3-1

Proposed Blackhorse Extension & Empire State Pipeline

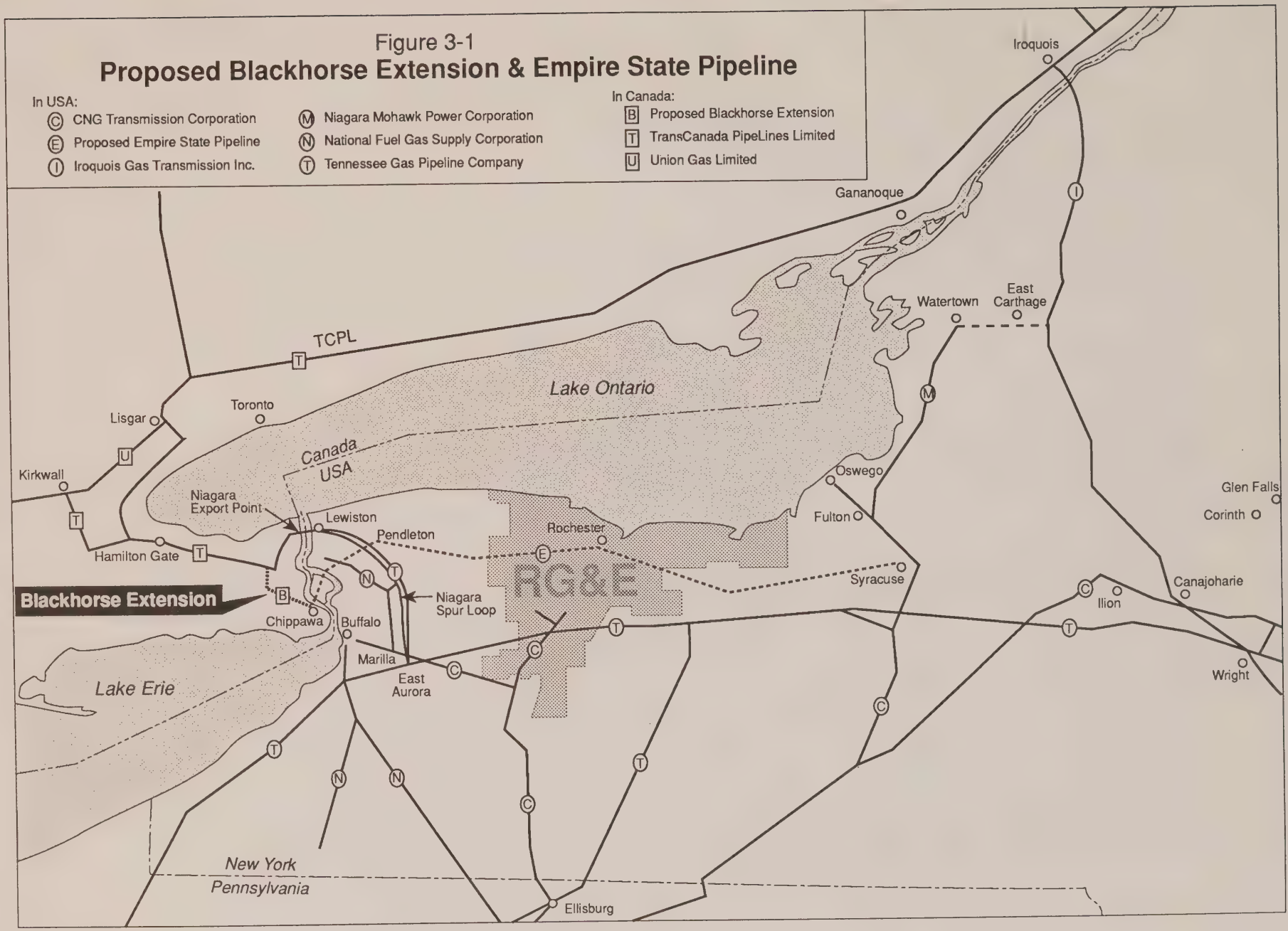


Table 3.1

Blackhorse Extension
Estimated Cost of Facilities

	Estimated Cost (000's of 1992 Canadian Dollars)
Pipeline:	
20.6 km of 610 mm O.D.	23 884
Compressor:	
6.3 MW at Station 1301	13 127
Metering:	
2 Meter Runs	2 047
Total Capital Cost	39 058

Table 3.2
Firm Service Requirements on the Blackhorse Extension
(1 November 1993 In-Service Date)

Shipper	Peak Day $10^3m^3/d$	Peak Day MMcfd	Annual 10^6m^3	Annual BCF	Terms (Years)
(a) Short Haul: St. Clair to Chippawa					
RG&E	2875	101.5	235	8.3	15[1]
RG&E	1558	55.0	128	4.5	15[1]
(b) Long Haul: Empress to Chippawa					
Kamine Carthage	402	14.2	131	4.6	15
Kamine Syracuse	462	16.3	152	5.4	15
RG&E	453	16.0	149	5.3	15
Total	5750	203.0	795	28.1	

(1) RG&E can step down its transportation requirements by 33 1/3 percent in each of the last three years of its 15-year service agreement.

Chapter 4

SUPPLY MATTERS

In considering TransCanada's application, the Board reviewed both overall and project-specific supply.

Overall supply refers to the total supply of natural gas that would be made available to the proposed facilities. In this respect, the Board considered whether there would be adequate gas supply to keep the pipeline fully utilized over its economic life.

Project-specific supply refers to the supply supporting the requests for service associated with the proposed extension. The Board examined whether each shipper had secured or would secure adequate supply to meet its obligations.

4.1 Overall Supply

In supporting the Canadian component of its supply, TransCanada relied on the Sproule overall supply study *The Future Natural Gas Supply Capability of the Western Canadian Sedimentary Basin* which it submitted in the GH-4-91 proceeding and incorporated by reference in this hearing. The Sproule study provided a projection of the natural gas supply available from the Western Canadian Sedimentary Basin, given particular natural gas demand and price assumptions.

St. Clair's overall supply evidence was based on the U.S. Energy Information Administration estimates of proved reserves in the Lower 48 states and the Potential Gas Committee estimates of undiscovered potential for the same areas. That evidence indicated there was adequate U.S. natural gas supply available for contracting to potential shippers using the Blackhorse/Empire pipeline systems.

No intervenors challenged the overall supply evidence.

4.2 Project-Specific Supply

There are two distinct types of firm service requirements supporting the proposed Blackhorse Extension as shown in Table 4.1.

Table 4.1
Gas Supply & Markets for Blackhorse Volumes

Shipper	Peak Day $10^3m^3/d$	Peak Day MMcfd	Supply	Market
(a) Short Haul: St. Clair to Chippawa				
RG&E	2875	101.5	U.S.	LDC (Base Load)
RG&E	1558	55.0	U.S.	LDC (Base Load)
(b) Long Haul: Empress to Chippawa				
Kamine Carthage	402	14.2	Cdn/Renaissance	Cogen
Kamine Syracuse	462	16.3	Cdn/NCM	Cogen
RG&E	453	16.0	Cdn/Unigas /Mark Resources	LDC (Base Load)

With respect to project-specific supply for the long-haul volumes, TransCanada submitted that Kamine Carthage and RG&E had already met the standard the Board requires by virtue of having obtained export licences in GH-5-89. The supply evidence was incorporated by reference into the current record. Kamine Syracuse does not yet have an export licence. However, the project-specific supply submitted to support Kamine Syracuse is the same as that before the Board in GH-1-92 in relation to another Kamine cogeneration project. This evidence was also incorporated into the current proceeding by reference.

Kamine Syracuse will purchase the export volumes from North Canadian Marketing Inc. ("NCM"). The export volumes will originate in the provinces of Alberta and Saskatchewan from reserves owned by NCM, or that NCM controls by virtue of supply arrangements with various producers. NCM has provided a corporate warranty, which is also guaranteed by NCO.

RG&E's transit volumes, which comprise 77 percent of the firm service requirements on the Blackhorse Extension, were an area of major discussion.

The Applicants argued that, in this specific case, a long-term storage contract, firm upstream transportation arrangements and firm transportation arrangements from supply areas to storage, together act as a proxy for RG&E's unexecuted long-term gas supply contracts. They suggested that RG&E should have no problem obtaining its gas supply on a competitive basis given the location of the storage, which can access most of the large gas supply basins in North America through major gas transmission systems. Further, TransCanada stated that it considers RG&E to be a creditworthy LDC that would pay the demand charges for TransCanada's services. RG&E pointed out that it is contractually bound to pay demand charges and thus has a strong incentive to use the proposed facilities.

RG&E stated that it had confirmation on the availability of long-term supply. RG&E also indicated that it would not be moving forward with its supply diversification efforts if it were not completely comfortable with the long-term supply outlook. If Blackhorse were approved, RG&E would be entering into supply contracts for three, five and seven-year terms. This portfolio approach would permit competition to work more effectively than tying up volumes for 10 to 15 years.

TransCanada indicated it did not expect the Board to make a generic ruling accepting storage as a proxy for long-term gas supply contracts. Furthermore, TransCanada said that it would accept a condition requiring it to demonstrate, prior to the start of construction, that gas supply contracts had been executed for the RG&E transit volumes.

RG&E indicated that, if necessary, it would agree to a condition that gas supply contracts be in place before the start of construction as long as construction did not commence prior to March 1993.

NCO said that the Board is not being asked to make a watershed decision in this case; rather it is being asked to demonstrate a degree of flexibility. NCO acknowledged that RG&E currently does not have fully contracted firm gas supply for the full term of TransCanada's transportation agreement; however, the evidence clearly demonstrates that RG&E is attempting to put together a portfolio of gas supply which will satisfy its needs. NCO said that as a public utility, RG&E has considerable financial strength. That financial strength, together with the long-term transportation and storage commitments, should be sufficient reason to warrant the Board's approval of the facilities. Similarly,

Unigas stated that RG&E is a large creditworthy local distribution company ("LDC") that has undertaken responsibility for demand charges and will secure adequate supply to meet its obligations.

The Consumers' Gas Company Ltd. ("Consumers'") was satisfied that TransCanada had adequately justified making an exception, in this case, to its usual long-term project-specific gas supply requirement. However, Consumers' was troubled by TransCanada's apparent reluctance to define clearly the parameters of this exception. Accordingly, Consumers' asked the Board to make a finding concerning which parameters should comprise an exception to TransCanada's usual project-specific supply requirements. Consumers' argued that, if TransCanada were allowed to retain the level of discretion it wishes in setting case-specific parameters, it would be contrary to the concept of an open-access pipeline described by the Board in its GH-2-87 Reasons for Decision.

CNG agreed that U.S. supply was available for contracting to RG&E; however, CNG pointed to a lack of evidence of any signed gas supply contracts to underpin the Blackhorse Extension. CNG questioned whether RG&E was prepared to make appropriate binding commitments in the marketplace to show the Board its commitment to utilize the applied-for Blackhorse facilities. CNG also pointed out that RG&E's level of commitment to Blackhorse should be evaluated in light of the fact that RG&E is unwilling to obtain the "replacement" U.S. supplies via existing alternative delivery systems. Because gas supply contracts are not in place, in CNG's view, the Board knows very little about the U.S. supply to be used to underpin RG&E's supply.

The APMC also expressed concern that the applied-for facilities are not supported by long-term gas supply contracts for the full capacity requested. It argued that without such long-term gas supply contracts, there is little evidence that the facilities would be fully utilized over their economic life. The APMC was concerned that the Board may accept storage and transportation as proxies for long-term supply contracts.

The APMC did not oppose approval of the Blackhorse Extension if the approval is conditional upon the Board being satisfied that gas supply contracts of sufficient duration were in place for all shippers before the start of construction. The APMC also recommended that the Board be consistent on the length of the term for the supply contracts that it requires for Canadian volumes and the RG&E transit volumes.

TransCanada argued that the Board should resist any attempt to codify TransCanada's criteria for project-specific gas supply. Any such attempt would be incomplete and would create inappropriate expectations about how TransCanada should respond to requests for service requiring facilities construction. TransCanada also argued that the Board's own rules do not specify a minimum length of gas supply contracts.

RG&E argued that the Board's Alberta Natural Gas Company Ltd., GHW-2-91 Reasons for Decision indicated that it is not necessarily an indispensable requirement to have long-term gas supply contracts if there are other factors that "fit the bill." As well, it is RG&E's business judgement that its gas supply contracting portfolio approach has achieved the optimum supply arrangements for its transit volumes. In addition, its standard practice with respect to its gas supply contracts is to include provisions to ensure continuation of satisfactory supply arrangements. In RG&E's view, any attempt by the Board to impose a specific term on gas supply contracts would be needless interference in commercial arrangements. RG&E pointed out that the lack of firm gas supply commitments to date is based on the suppliers' reluctance to dedicate gas suppliers' and time for contract negotiations until they are assured that the facilities will be built.

Views of the Board

The Board is satisfied that there will be adequate overall gas supply to ensure long-term utilization of the proposed Blackhorse facilities.

With respect to the project-specific supply for the long-haul volumes, the Board notes that all three shippers have signed supply contracts. Having examined the terms of these contracts and the detailed reserves and deliverability evidence provided, the Board is satisfied with the adequacy of supply for these projects.

However, the Board has a concern regarding the adequacy of gas supply relating to RG&E's transit volumes. The Board recognizes that RG&E is a creditworthy LDC and has firm transportation and storage arrangements in place. Therefore, the Board recognizes that RG&E is capable of meeting the demand charges and has a strong economic incentive to see that its capacity on Blackhorse is fully utilized. However, the Board does not accept RG&E's storage and transportation arrangements as a proxy for contracted gas supply arrangements. Therefore, the Board requires TransCanada to file the executed gas supply contracts prior to the commencement of construction.

In addition, since the terms of these supply contracts will be less than that usually required by TransCanada, the Board is of the view that TransCanada will be responsible for any unrecovered demand charges which might occur during the first fifteen years of the project. Specifically, unrecovered demand charges associated RG&E's short-haul volumes of 4433 $10^3m^3/d$ (156.5 MMcfd) will not be eligible for treatment in a deferral account.

Decision

TransCanada will be responsible for any unrecovered demand charges associated with RG&E's transit volumes which might occur over the first fifteen years of the project. Specifically, unrecovered demand charges associated with RG&E's short-haul volumes of 4433 $10^3m^3/d$ (156.5 MMcfd) will not be eligible for treatment in a deferral account.

Gas Market Requirements

The proposed Blackhorse Extension facilities would be used by RG&E to serve its New York State franchise area, and by Kamine to serve two cogeneration facilities located in Carthage and Syracuse, N.Y. (Refer to Tables 3.2 and 4.1). The Applicants also provided overall gas demand information to demonstrate the likelihood that the facilities will be used and useful over their economic life.

5.1 Overall Market Requirements

The Applicants' consulting witness, Mr. Hughes, submitted that while the growth in the traditional requirements in Empire's service territory will be modest, very substantial market potential was seen in the electric generation market, particularly in the gas-fired cogeneration market sector. The evidence showed that there is currently 353 MW of cogeneration capacity on-line consuming 2635 $10^3m^3/d$ (93.0 MMcfd) of gas on a peak-day basis. Cogeneration plants under construction were forecast to consume an additional 2768 $10^3m^3/d$ (97.7 MMcfd) of gas on a peak-day basis. Cogeneration plants for which the electric power purchase contract has been approved, but for which construction has not yet commenced, are forecast to consume an additional 5694 $10^3m^3/d$ (201.0 MMcfd) of gas on a peak-day basis. The forecast showed total cogeneration potential of 5799 MW consuming some 37 449 $10^3m^3/d$ (1 322.0 MMcfd) of gas on a peak-day basis. The source of the gas for these facilities is expected to be either the U.S. or Canada, or both. The forecast acknowledged that not all of these cogeneration projects will be constructed and that the Empire system will likely be competitive in supplying some, but not all of these projects.

The Applicants also indicated that the findings of the New York State Public Service Commission ("NYPSC") in Opinion 91-3, dated 1 March 1991, granting Empire a Certificate of Environmental Compatibility and Public Need, demonstrate the adequacy of the western and central New York market to ensure long-term use of the Blackhorse/Empire facilities.

NYSEO indicated that the Empire system is required to meet anticipated gas market growth and to enhance competition in pipeline services to western New York. NYSEO noted that the need for Empire was determined on the basis of the *1991 State Energy Plan* prepared by the State Energy Office and the Departments of Public Service and Environmental Conservation. The Energy Plan envisages increased usage of gas originating from a combination of U.S. domestic, Canadian and other sources, including imported liquefied natural gas ("LNG").

The *1991 State Energy Plan* projects gas consumption to increase from approximately 25 500 10^6m^3 (900 Bcf) in 1990, to 33 800 10^6m^3 (1 200 Bcf) by 2010, or by 32 percent. Most of the growth is expected to occur in the power generating market particularly in the cogeneration market sector, where gas demand is forecast to increase ninefold between 1990 and 1994. The NYSEO noted that there is currently insufficient pipeline capacity serving New York State to satisfy the expected market growth and that the Blackhorse/Empire capacity, in addition to the existing Iroquois and Niagara Line capacity, is therefore critical to satisfying that market growth.

The Applicants submitted that, with the exception of CNG, all other interested parties were in virtual agreement that the western and central New York State market to be served by the Blackhorse/Empire facilities is attractive and supports the need for the applied-for Blackhorse facilities.

The Applicants noted that the NYSPC, in approving the Empire pipeline system, found that the new facilities would provide additional, independently-owned gas pipeline capacity to New York that could access Canadian gas and allow New York LDC's and gas consumers to diversify their gas supply portfolios and to benefit from the lower transportation rates that would come from increased pipeline competition. The Applicants submitted that the NYPSC found that there is substantial unsatisfied market demand in western and central New York State. The Applicants concluded that, given the growing New York market and the market support given to date to the Blackhorse/Empire system, the Blackhorse Extension should not be viewed as capacity which will replace the expandability of TransCanada's Niagara Line, but rather should be viewed as complementary, needed pipeline capacity. The Applicants submitted that the Blackhorse/Empire system will provide substantial economic benefits to Canada by allowing access to attractive new export markets.

The Applicants indicated that Empire has been developed as an independent pipeline system to compete directly with the existing pipelines in the market area, thereby providing the LDCs and gas consumers with the benefits of competition and choice. The Applicants noted that in order to permit Empire to provide independent, competitive service, it cannot rely upon the cooperation of its competitors (CNG and Tennessee) and accordingly, Empire is resisting any attempt to force its shippers to rely upon CNG and Tennessee as a means of interconnecting with the TransCanada system.

The Applicants argued that because of a U.S. policy favouring gas transportation competition, the attractiveness of western and central New York's growing markets, and the determination of the state's LDCs and large gas consumers to diversify their gas supply portfolios, there will be an expansion of pipeline capacity into the market. The Applicants concluded that if the Blackhorse Extension is disallowed, additional U.S. pipeline capacity will be constructed with the result that more U.S.-sourced gas will serve that market than would have been the case had the Blackhorse/Empire system been in place.

The Applicants concluded that the Empire pipeline will result in pipeline competition into that market which in turn will lead to lower transportation rates and increased gas consumption, creating market opportunities for both Canadian and U.S. gas producers and marketers.

The Multiple Intervenors, an unincorporated association of 39 large industrial electricity and gas end-users located in New York State, said in a letter of comment that it has a significant number of members who have businesses located in the franchise areas of LDCs who could be served by Empire. The Multiple Intervenors submitted that the Blackhorse/Empire system will bring much-needed competition to the current monopolistic providers of interstate pipeline service to central and western New York State and thereby, provide improved service options, better gas prices, and greater access to this market for Canadian gas producers and marketers. This view was shared by Fulton Cogeneration Associates ("Fulton"). Fulton also submitted that while the denial of the original Blackhorse Extension facilities forced it to secure alternative gas supplies and alternative means of getting that gas to its cogeneration facilities, it nevertheless believes that additional pipeline capacity is required in western and central New York State to transport gas from the Canada/U.S. border.

IPAC argued that Canadian gas producers have worked diligently to identify and develop new sound markets in upstate New York and that the Blackhorse Extension will enhance the ability of those producers' to access those markets. IPAC has concluded that those markets want the Blackhorse/Empire system to proceed, thereby securing access to Canadian-sourced gas. IPAC submitted that denial of the Blackhorse Extension will result in U.S.-sourced gas displacing Canadian-sourced gas in those U.S. markets.

5.2 Project-Specific Requirements

RG&E is a combined electric and natural gas distribution utility serving gas customers in the City of Rochester and in parts of seven surrounding counties in western New York State.

RG&E views the Blackhorse Extension as a link between TransCanada's existing system and the proposed Empire system essential to its program to diversify its gas supply, transportation, and storage arrangements and to thereby lessen its dependence on CNG. RG&E is currently dependent upon CNG for most of its annual system supply requirements and for all of its transportation service.

RG&E indicated that it has negotiated a service agreement with CNG which provides RG&E the option to reduce its reliance upon CNG for a portion of its system supply and transportation service requirements. Specifically, the agreement allows RG&E to take assignments of CNG capacity on pipeline systems upstream of CNG and to contract for gas supplies that will be transported on one or more of these pipeline systems, and on the CNG system, to RG&E's franchise area. RG&E noted that these assignments will provide approximately 50 percent of its system supply, yet maintain RG&E's reliance upon CNG for transportation service. The remaining 50 percent would be satisfied by ramping down RG&E's use of CNG and by making alternative supply, storage and transportation arrangements, notably by accessing gas supplies through the TransCanada, Empire and other pipeline systems.

With respect to the latter, the new service agreement with CNG provides for the orderly phasing in of gas supplies to be made available via the Blackhorse/Empire system. Specifically, the phase-in will occur over a two-year period, with a total of 4887 $10^3m^3/d$ (172.5 MMcfd) occurring in the first year, and the remaining increment of 1558 $10^3m^3/d$ (55.0 MMcfd) occurring in the second year.

RG&E noted that, assuming a 1 November 1993 in-service date for Empire, it can only be assured of maximizing its initial use of Empire by providing notice to CNG, on or before 1 July 1992, of its intention to implement a reduction of 1190 $10^3m^3/d$ (42.0 MMcfd) as of 1 November 1993. This would allow RG&E to phase in its full first year Blackhorse/Empire transportation entitlements without having to pay double demand charges (for transportation service on both the CNG and Blackhorse/Empire systems). Further, RG&E stated that in such an event, it is satisfied that all necessary contractual arrangements and regulatory approvals will be in place to allow the gas to be transported over the Blackhorse/Empire system.

The Blackhorse Extension would permit RG&E to receive gas supply by two alternative means upstream of Kirkwall, Ontario. Firstly, RG&E would be able to access Canadian-sourced gas on the TransCanada system from Empress, Alberta (long-haul gas). Secondly, RG&E would be able to access U.S.-sourced gas (i.e. short-haul or transit gas) on the ANR and Great Lakes Gas Transmission Limited Partnership ("Great Lakes" or "GLGT") systems through Michigan. This source of gas supply would interconnect with TransCanada at St. Clair, Ontario and from there, move on the TransCanada and Union systems to Kirkwall, Ontario. The latter routing would also allow RG&E to access Canadian-sourced gas off the Great Lakes/TransCanada system.

By application dated 8 January 1991, RG&E applied to the Board, pursuant to section 116 of the Act, for an order, or orders, permitting it to import into Canada at Sarnia, Ontario, and to subsequently export at Chippawa, Ontario, a daily transit volume of up to 5991 $10^3m^3/d$ (211.5 MMcfd) commencing 1 November 1991. The total transit volume is comprised of 2875 $10^3m^3/d$ (101.5 MMcfd) of service commencing 1 November 1991 plus two subsequent volume increases of 1558 $10^3m^3/d$ (55.0 MMcfd) beginning 1 November 1992 and 1 November 1993. Given the delay in commencement of service on the Blackhorse/Empire system to 1 November 1993, the aforementioned dates no longer apply and, accordingly, the application is expected to be amended. The original application is pending before the Board.

In the GH-5-89 Reasons for Decision, dated April 1991, the Board granted Unigas a licence to export 453 $10^3m^3/d$ (16.0 MMcfd) for a ten-year term commencing on the date of first delivery.

TransCanada argued that all Canadian and U.S. regulatory approvals associated with the Blackhorse Extension have either been secured or will be applied for in the near future. By Opinion and Order No. 485, dated 19 March 1991, the U.S. Department of Energy, Office of Fossil Energy ("DOE/FE") granted RG&E authorization to export to Canada and to re-import 6445 $10^3m^3/d$ (227.5 MMcfd) of gas over a 15-year period. RG&E's U.S. import authorization, with respect to the 453 $10^3m^3/d$ (16.0 MMcfd) of Canadian-sourced gas that it has contracted to purchase from Unigas, was granted by the DOE/FE on 16 May 1991. However, TransCanada noted Kamine Syracuse's DOE/FE import approval application and Union's facilities application to the Ontario Energy Board for the 1558 $10^3m^3/d$ (55.0 MMcfd) RG&E in-transit volume, are two authorizations for which applications have not yet been filed.

RG&E submitted that, notwithstanding the replacement nature of the gas proposed to be exported via the Blackhorse Extension, there would be a steady 1 to 1.5 percent annual load growth in its franchise area. A ten-year gas supply/demand forecast was provided showing that annual gas consumption would increase 9.6 percent over ten years from a forecast 1473 10^6m^3 (52.0 Bcf) in 1991 to 1615 10^6m^3 (57.0 Bcf) in 2000.

RG&E submitted that its ability to absorb the gas to be transported via the Blackhorse Extension is not dependent upon incremental demand. However, RG&E argued that the increased competition that the new Blackhorse Extension and Empire facilities would create in western New York will stimulate gas demand and cause its long-term projections to be conservative. RG&E believes that its customers represent an established, stable gas market for the gas to be shipped on the proposed Blackhorse Extension.

Kamine Carthage proposes to export, over a fifteen-year period, 402 $10^3m^3/d$ (14.2 MMcfd) at Chippawa, Ontario to fuel its 49.9 MW gas-fired, combined-cycle cogeneration facility to be located at James River mill in Carthage, Jefferson County, New York. Niagara Mohawk Power Corporation ("Niagara Mohawk") would purchase the electricity and James River II, Inc. would purchase the resulting thermal energy (steam) for use in the manufacture of paper towels and tissue paper.

In April 1991, following the GH-5-89 proceedings, the Board issued export Licence GL-158 to Kamine Carthage. In March 1990, the DOE/FE issued DOE/FE Order 389 granting Kamine Carthage authorization to import the Canadian-sourced gas over a 20-year period commencing with first delivery.

The Kamine Carthage cogeneration facility is currently operating and is using Canadian-sourced gas in accordance with interim arrangements which include an assignment of Consumers' TransCanada capacity to Niagara, Ontario. Kamine Carthage noted that, in the absence of timely approval of the Blackhorse Extension facilities application, Kamine Carthage has the right, under the terms of its Kamine/Renaissance Energy Ltd. ("Renaissance") Gas Supply Agreement, to shed its Canadian gas supply.

Kamine Syracuse proposes to export 462 $10^3m^3/d$ (16.3 MMcfd) at Chippawa, Ontario to fuel its 79.9 MW gas-fired cogeneration facility to be constructed near the village of Solvay, Onandaga County, New York. Niagara Mohawk would purchase the electricity and the New York State Fair and Olin Corporation would purchase the resulting thermal energy. The Kamine Syracuse facility is currently under construction and commercial operations are expected to commence in late 1993.

Kamine Syracuse's export licence application was filed with the Board in April 1992. Kamine Syracuse has not yet filed its U.S. import application with the DOE/FE.

Kamine also noted that with respect to the Kamine Syracuse project, the financial backers to that project have required that Kamine enter into 15-year back-up gas supply and transportation arrangements which are not dependent upon further Canadian regulatory approvals and consequently, do not involve Canadian-sourced gas supplies. Kamine argued that without timely approval of the Blackhorse Extension, lender-driven back-up arrangements involving U.S. gas supply and transportation will be implemented putting the Kamine Syracuse project at risk for its Canadian gas supply.

Kamine concluded that it would be unfortunate for Canadian producers if, in the absence of the Blackhorse Extension, these two high load factor, long-term markets were lost to U.S. gas supply.

TransCanada noted that Encogen Four Partners, L.P., Fulton Cogeneration Associates, Indeck Gas Supply Corporation-Corinth, and Indeck Gas Supply Corporation-Ilion are no longer requirements in support of the current Blackhorse Extension facilities application (refer to NEB, Reasons for Decision, GH-1-91, July 1991, Table 2.2, page 10). TransCanada indicated that the original Blackhorse Extension cogeneration shippers have, since the GH-1-91 denial, sought service at Niagara, Ontario, commencing 1 November 1992, through a proposed expansion of National Fuel's capacity on the Niagara Spur Loop Line. Those shippers chose to export at Niagara, Ontario instead of Chippawa, Ontario because of the delay in service caused by the denial of the original Blackhorse Extension facilities application.

The Applicants suggested that the Board could take additional comfort from the list of shippers who have executed transportation precedent agreements with Empire to ship some 7989 to 8640 $10^3m^3/d$ (282.0 to 305.0 MMcfd) of gas commencing 1 November 1993. The five shippers identified were: National Fuel Gas Supply; NYSEG; Niagara Mohawk; Sithe; and U.S. Generating Company ("U.S. Generating"). The gas to be shipped could be either Canadian or U.S.-sourced and the proposed markets to be served would be a mixture of industrial and cogeneration.

St. Clair noted that although these additional shippers were not included in the volumes underlying the Blackhorse Extension application, these potential requirements clearly show that there is a current and long-term need for the Empire facilities and thus, the Blackhorse Extension.

Sithe, while not seeking capacity on the Blackhorse Extension for service commencing 1 November 1993, expects to use the Blackhorse Extension to flow test gas on 1 August 1994, and to supply its full fuel requirements on 1 January 1995. The Blackhorse Extension capacity will be used to supply 5241 $10^3m^3/d$ (185.0 MMcfd) of gas to Sithe's proposed 1000 MW combined cycle, gas-fired cogeneration facility to be constructed near Scriba, New York. At least 850 $10^3m^3/d$ (30.0 MMcfd) of the plant's fuel requirements will be met by Canadian gas. Sithe fully supported approval of the Blackhorse Extension facilities and believes that construction of the Blackhorse/Empire system will create attractive new market opportunities for Canadian gas.

CNG argued that the potential and prospective Blackhorse/Empire shippers have demonstrated, "... at best, only a certain interest in this transportation path, albeit not an exclusive interest".

CNG noted that the Blackhorse/Empire project involves the displacement or replacement of a current gas supply arrangement that serves a traditional market which may experience only modest growth. CNG added that the potential cogeneration demand in the New York State market that could be served via the Blackhorse Extension is highly speculative at this time. CNG concluded that such potential markets could be served by existing or future U.S. pipeline facilities.

NYSEO stated that without Empire as a third Canadian connection, growing gas demand in New York State and throughout the U.S. Northeast would soon exhaust the expandability of the two existing connections.

Views of the Board

The Board is satisfied that the specific projects (i.e., RG&E, Kamine Carthage and Kamine Syracuse) identified by TransCanada in support of the Blackhorse Extension represent *bona fide*, long-term markets for Canadian and U.S.-sourced gas. Specifically, the Board has taken note that RG&E is a large U.S. LDC of significant means which has contracted for long-term Blackhorse Extension capacity to access Canadian and U.S.-sourced gas in order to displace, for the most part, gas it currently purchases through CNG, its sole gas supplier. In addition, the Board notes that the Kamine Carthage and Kamine Syracuse cogeneration projects are well advanced and have, to date, made significant, long-term contractual and financial commitments towards securing access to the Blackhorse Extension and to Canadian gas supplies.

With regard to the strength of the overall market and its potential growth, the Board is satisfied by the evidence of Mr. Hughes, consultant to the Applicants.

The Board acknowledges the evidence of NYSEO, and the market projections contained in the *1991 State Energy Plan*, as further evidence of the potential for gas market growth in New York State. The Board concurs with those parties who have argued that, given the existence of a viable means of accessing that market, Canadian gas supplies will be competitive and will play a role in satisfying that future market demand. In that respect, the Board notes the evidence supplied by NYSEG, Niagara Mohawk, Sithe, U.S. Generating and National Fuel is an indication of the potential for additional Canadian gas sales into the New York State market that could be supplied via the Blackhorse/Empire system in the future.

The Board is satisfied that the projects underpinning the applied-for facilities are sufficiently advanced with respect to upstream and downstream transportation arrangements, gas sales arrangements, and the securing of all necessary Canadian and U.S. regulatory approvals to support the applied-for facilities. The Board believes that there is a reasonable expectation that any outstanding contractual and regulatory matters can be finalized in a timely manner.

However, to ensure that the Blackhorse Extension facilities are both used and useful over the long term, the commencement of construction will be conditional upon TransCanada demonstrating to the Board's satisfaction that, in respect of the new firm export volumes, or import for re-export volumes, all necessary U.S. and Canadian federal regulatory approvals have been received.

Transportation Arrangements and Financial Assurances

6.1 Transportation and Storage Service Arrangements

TransCanada has entered into precedent agreements with Kamine Carthage and Kamine Syracuse for the delivery from Empress, Alberta to the Chippawa, Ontario export point of 864 $10^3m^3/d$ (30.5 MMcfd). (Refer to Tables 6.1 and 6.2)

Upstream, both export shippers have secured firm transportation on NOVA Corporation of Alberta ("NOVA") and TransGas Limited ("TransGas"), and downstream, both have executed transportation service agreements with Empire and Niagara Mohawk for delivery of the gas to their respective facilities.

TransCanada noted that all of the upstream and downstream transportation agreements for RG&E, Kamine Carthage, and Kamine Syracuse have been executed and that its transportation service agreement with each of these shippers is long term (i.e., for 15 years commencing 1 November 1993).

RG&E has also entered into two transportation service precedent agreements with TransCanada for the delivery of 4433 $10^3m^3/d$ (156.5 MMcfd) of gas, commencing 1 November 1993, from the St. Clair, Ontario receipt point to the export point at Chippawa, Ontario. In addition, RG&E has executed a precedent agreement with TransCanada for the delivery of 453 $10^3m^3/d$ (16.0 MMcfd) of Canadian-sourced gas from Empress, Alberta to the Chippawa, Ontario export point. (Refer to Table 6.1)

With respect to RG&E's 4433 $10^3m^3/d$ (156.5 MMcfd) of U.S.-sourced gas supply, commencing 1 November 1993, RG&E has entered into long-term agreements with ANR for the delivery of gas from various U.S. gas supply basins to ANR's gas storage facilities near Farwell, Michigan, or to the interconnections of the ANR and Great Lakes systems. In addition, RG&E and ANR have executed a gas storage service agreement with respect to the injection and the withdrawal of gas to be transported for RG&E by ANR (Refer to Tables 6.2 and 6.3).

RG&E entered into a transportation service agreement with Great Lakes to effect delivery of gas, commencing 1 November 1993, from various points on the ANR system to St. Clair, Michigan. The FERC recently approved Great Lakes' facilities expansion to accommodate the RG&E requested service of 4433 $10^3m^3/d$ (156.5 MMcfd) commencing 1 November 1993. However, Great Lakes has not yet applied to the FERC for new facilities required to provide additional service to RG&E of 1558 $10^3m^3/d$ (55.0 MMcfd) commencing 1 November 1994.

Downstream of the TransCanada system, RG&E and Empire have entered into a 15-year Amended and Restated Precedent Agreement for the receipt and delivery of up to 6445 $10^3m^3/d$ (227.5 MMcfd) of gas from the point of interconnection of TransCanada's proposed Blackhorse Extension and the proposed Empire facilities near Chippawa, Ontario, to various delivery points in western New York

Table 6.1

RG&E and Kamine Transportation Service Arrangements with TransCanada

	Shipper	Type of Service	Peak Day $10^3m^3/d$	Peak Day MMcfd	Receipt Point	Delivery Point
(a)	**Short-Haul: St. Clair to Chippawa**					
	RG&E	Firm	2875	101.5	Sarnia	Chippawa
	RG&E	Firm	1558	55.0	Sarnia	Chippawa
(b)	**Long-Haul: Empress to Chippawa**					
	RG&E	Firm	453	16.0	Empress	Chippawa
	Kamine Carthage	Firm	420	14.2	Empress	Chippawa
	Kamine Syracuse	Firm	462	16.3	Empress	Chippawa
	Total		5750	203.0		

Table 6.2

Transportation Arrangements with Upstream and Downstream Pipelines

Shipper	Peak Day $10^3m^3/d$	Peak Day MMcfd	Upstream	Downstream
(a) Short-Haul: St. Clair to Chippawa				
RG&E	2875	101.5	ANR/GLGT	Empire
RG&E	1558	55.0	ANR/GLGT	Empire
(b) Long-Haul: Empress to Chippawa				
Kamine Carthage	402	14.2	NOVA	Empire/NIMO
Kamine Syracuse	462	16.3	NOVA/TransGas	Empire/NIMO
RG&E	453	16.0	NOVA/TransGas/WEI	Empire
Total	5750	203.0		

Table 6.3

RG&E Transportation and Storage Service Arrangements With U.S. Pipelines

Pipeline	Type of Service	Peak Day $10^3m^3/d$	Peak Day MMcfd	Receipt Point	Delivery Point
1. ANR	Firm Transportation (Southwest Area)	1201	42.4	Various U.S. supply regions	ANR Michigan gas storage facilities and GLGT at Farwell, Mich.
2. ANR	Firm Transportation (Southeast Line)	1841	65.0	Various U.S. Supply regions	ANR, Michigan gas storage facilities and GLGT at Farwell, Mich.
3. ANR	Gas Storage	(a) 1190 (b) 4326	46.0 152.7		
4. GLGT	1 -Firm Transportation	2904	102.5	Farwell, Capac and Muttonville, Mich.	St. Clair, Mich.
	2 - Firm Transportation	1558	55.0		
5. Empire	Firm Transportation	(c)		Niagara Falls, N.Y.	Various points in New York State

(a) Injection
(b) Withdrawal
(c) A maximum daily quantity of 4887 10^3 m^3/d (172.5 MMcfd) from the in-service date to 1 November 1994, and 6445 10^3 m^3/d (227.5 MMcfd) from 1 November 1994 through the remaining term of the agreement.

State. In January 1991, the NYPSC issued Order No. NYPSC 91-3 authorizing the construction of the Empire system. Similarly, in July 1991, the FERC granted Empire permission to construct and operate facilities that would interconnect Empire with TransCanada's proposed Blackhorse Extension under the Niagara River near Grand Island, N.Y.

In its GH-2-87 Decision, section 9.3.1, the Board decided that "... in the future, TransCanada should seek approval from the Board prior to committing itself to a change in its long-term contractual obligations with other pipeline companies when the costs of transportation services provided under the contracts are included in TransCanada's revenue requirements." Accordingly, in this proceeding TransCanada sought approval of increased firm transportation entitlements of 4433 $10^3m^3/d$ (156.5 MMcfd) on Union's system, resulting from the Assignment Agreement between RG&E, TransCanada and Union for 2875 $10^3m^3/d$ (101.5 MMcfd) and an M-12 Agreement between TransCanada and Union for the balance of 1558 $10^3m^3/d$ (55.0 MMcfd) required to provide short haul service for RG&E from St. Clair to Chippawa.

Union and RG&E executed a 15-year M-12 Firm Transportation Contract for the delivery of 2875 $10^3m^3/d$ (101.5 MMcfd) from Dawn to Kirkwall, Ontario. Subsequently, RG&E, TransCanada, and Union entered into an Assignment Agreement by which RG&E assigned to TransCanada the Union/RG&E M-12 Firm Transportation Contract.

TransCanada explained that the Assignment Agreement was entered into so that TransCanada would have sufficient capacity entitlement on the Union system to enable it to effect firm, integrated, transportation service for RG&E. TransCanada indicated that at the time it filed its original Blackhorse Extension application, its transportation service for RG&E was contemplated to be from Kirkwall, Ontario to Chippawa, Ontario. RG&E would have been responsible for making the gas available at Kirkwall, Ontario. RG&E subsequently refined its transportation requirements and changed the receipt location to TransCanada's interconnection with Great Lakes at the St. Clair River. TransCanada submitted that, because it did not itself have sufficient capacity on the Union system to accommodate RG&E's change from the Kirkwall to the St. Clair River receipt point and since RG&E already had pursued such arrangements with Union, an assignment to TransCanada of RG&E's rights to such service during the period that TransCanada would provide equivalent service to RG&E was proposed.

The Assignment Agreement provides that, during the period that TransCanada is obligated to provide RG&E with 2875 $10^3m^3/d$ (101.5 MMcfd) of transportation service, TransCanada will be the party contracted to Union for an equivalent level of service on the Union system between Dawn and Kirkwall, Ontario. However, if, after twelve years RG&E elects a reduction in TransCanada transportation service, it is at TransCanada's discretion whether to contract with Union for anything more than the service that TransCanada is obligated to provide RG&E. RG&E would, however, remain responsible to Union for payment of the demand charges on the contracted capacity not utilized by TransCanada. Figure 6-1 illustrates the location of the Union system in relation to the Sarnia to Kirkwall transportation route.

Figure 6-1

Union/TransCanada Facilities

TransCanada concluded that RG&E remains responsible to Union for any level of service between the 2875 $10^3m^3/d$ (101.5 MMcfd) and the portion of the freed-up capacity, resulting from the step-down, elected to be used by TransCanada for the remaining term of the Union contract. TransCanada submitted that this provides RG&E an incentive not to reduce its contract with TransCanada. (Refer also to Chapter 11, Tolling Matters).

Consumers' stated that it was initially concerned that TransCanada may be giving RG&E special treatment, because it would be spreading across its system, costs that RG&E would otherwise incur directly. However, in light of TransCanada's ability to use the M-12 capacity for other services when it is not needed for RG&E, to the benefit of other shippers, and TransCanada's policy of providing an integrated transportation service for Canadian LDCs in similar circumstances, it did not object to the proposed assignment. Consumers' also pointed out that there is nothing to distinguish the proposed assignment from a direct contract between Union and TransCanada for the same purpose, such as the contract for RG&E's short-haul service of 1558 $10^3m^3/d$ (55.0 MMcfd) or, the contract recently approved by the Board in its GH-4-91 proceeding for Tennessee's short-haul service of 1062 $10^3m^3/d$ (37.5 MMcfd).

NYSEG and Sithe/Enron supported the assignment of RG&E's capacity on the Union system to TransCanada.

The Applicants noted that all of RG&E's transportation service agreements are for 15-year terms and, with the exception of the Union agreement, contain a provision for a step-down commencing with the thirteenth contract year. Under the step-down provisions, RG&E may reduce its volume entitlement by 33 1/3 percent per year. RG&E advised that the step-down provision would accord it the flexibility to pursue other supply and transportation options after the twelfth contract year if such options were found to be attractive. RG&E argued that it has no present intention to exercise its rights under the step-down provision and that it is equally likely that it would seek to increase and extend those service requirements.

TransCanada noted that, in the event RG&E elected to exercise its step-down option and to the extent capacity became available, it would offer that capacity in accordance with its queuing procedures to prospective shippers proposing to use the Chippawa, Ontario export point, or to those proposing to use the Niagara, Ontario export point. The latter offer would occur only if sufficient capacity become available between the Blackhorse Junction and Niagara, Ontario.

The Applicants argued that RG&E has an economic incentive to fully utilize its TransCanada service agreements to the end of the 15-year term since RG&E will continue to be responsible to Union for all contractual obligations, including demand charge payments, for the full term of the TransCanada/ RG&E/Union Assignment Agreement.

RG&E noted that it is working towards a 1 November 1993 targeted in-service date for transportation on the Blackhorse Extension and on all associated upstream and downstream transportation systems. RG&E added that this in-service date requires that it commence filling Michigan storage in the spring of 1993 so that injections will be completed prior to the 1993-94 heating season.

Views of the Board

The Board is satisfied with the firm, long-term transportation service and precedent agreements filed in support of the Blackhorse Extension facilities.

Notwithstanding, any approval granted by the Board with respect to the subject application will be conditional upon TransCanada demonstrating, prior to the commencement of construction, that in respect of the transportation of all new firm volumes on the Blackhorse Extension, all transportation contracts have been executed and all necessary U.S. and Canadian federal regulatory approvals have been granted in respect of any upstream and downstream facilities or transportation services.

The Board is satisfied that the acquisition by TransCanada of M-12 capacity on Union of 4433 $10^3m^3/d$ (156.5 MMcfd) is in the public interest and is required to provide service to RG&E.

Decision

The Board approves the Assignment Agreement between RG&E, TransCanada and Union for 2875 $10^3m^3/d$ (101.5 MMcfd) and the M-12 Agreement between TransCanada and Union for 1558 $10^3m^3/d$ (55.0 MMcfd).

6.2 Financial Assurances

TransCanada submitted that its financial exhibits and evidence adopted by reference from GH-4-91, together with its 1991 Annual Report, adequately demonstrate its solid financial condition and its competence to carry out the applied-for facilities program.

With respect to RG&E, TransCanada argued that it is a large, well-established, financially sound utility, as demonstrated through its 1991 Annual Report and that as such, was not required to furnish TransCanada with any specific financial assurances apart from RG&E's execution of its short-haul service contracts. With respect to RG&E's 453 $10^3m^3/d$ (16.0 MMcfd) long-haul service contracts, RG&E has executed a "Performance Agreement on Financial Assurances" which permits TransCanada to periodically request some kind of financial assurance.

With respect to Kamine, TransCanada noted that it has secured a performance agreement on financial assurances in accordance with which the Kamine cogeneration projects have undertaken to provide TransCanada with a letter of credit (or its equivalent) for one year of demand charges, prior to executing a firm service contract with TransCanada.

Views of the Board

As set out fully in its GH-5-89 Reasons for Decision, and as reiterated in its recent GH-4-91 Reasons for Decision, Section 3.7, "Risk and Financial Assurances", page 25, the Board believes that TransCanada should retain the right to determine the type of financial assurance package that should be negotiated with individual prospective shippers. Similarly, the Board believes that TransCanada should have the right to determine whether such a financial assurance package is required at all, as it did in the case of RG&E.

The Board believes that the question of prudency with respect to TransCanada's Decision not to require such assurances would be reviewed in the event that RG&E defaulted on its demand charge obligation and TransCanada applied for the recovery of those demand charges from the remaining shippers on its system.

Facilities

7.1 Facilities Design

The facilities applied for in TransCanada's section 58 application for the proposed Blackhorse Extension include a permanent 6.3 MW compressor unit at Station 1301 (Kirkwall), 20.6 kilometres (12.8 miles) of 610 mm O.D. (24 inch) pipe and metering facilities at Chippawa. The 610 mm O.D. pipe would be compatible with the dimensions of the proposed Empire system. The capital cost of the proposed facilities is estimated at $39.1 million in 1992 dollars. The projected in-service date is 1 November 1993. TransCanada has proposed the use of directional drilling under the Chippawa Channel of the Niagara River and at other selected watercourse crossings.

TransCanada's design was based on providing sufficient capacity to deliver the initial volumes of 5750 10^3 m^3/d (203 MMcfd) through Chippawa with expandibility to 16 430 10^3 m^3/d (580 MMcfd) before additional facilities would be required.

TransCanada examined the option of using 508 mm O.D. (20 inch) pipe which would provide a capacity of 10 963 10^3 m^3/d (387 MMcfd) with Station 211 discharging at the maximum allowable operating pressure. It concluded, however, that the smaller diameter pipe was not appropriate since the capacity of the Niagara-Kirkwall system would be restricted by the resulting inlet pressure on the Blackhorse Extension and there would not be enough capacity to provide for future growth at Chippawa.

TransCanada proposed the use of CSA Class 3 design standards for the entire length of the Blackhorse Extension based on the potential for future land development along the pipeline route. It was estimated that the extra cost for this design upgrade would be approximately $80 000, compared to a cost of approximately $1 000 000 for an upgrade after construction.

During the hearing, CNG expressed concerns regarding the overall need for the facilities and noted that the Blackhorse Extension would not significantly increase the total capacity of the Niagara Line. CNG pointed out that the additional capacity of the Niagara-Kirkwall system with the Blackhorse Extension would be about 2181 10^3 m^3/d (77 MMcfd), decreasing to 198 10^3 m^3/d (7 MMcfd) should Station 209 be retired. It was noted by CNG that the Blackhorse Extension would make use of the immediate expandability of the Niagara-Kirkwall system. Further expansion beyond the estimated Niagara export capacity of approximately 42 500 10^3 m^3/d (1.5 Bcfd) would require costly looping and facilities.

Views of the Board

The Board is of the view that the proposed design makes good use of the expandability of the Niagara Line system while retaining the potential for future expansion of the entire system.

The Board accepts TransCanada's decision to use CSA Class 3 design for the entire length of the proposed extension based on the likelihood of development occurring along the pipeline route that would require pipe upgrading and considering that the incremental cost to construct the entire pipeline to Class 3 specifications is less than the cost of a single upgrade.

The Board is satisfied that the facilities applied for are appropriate and accepts TransCanada's design of these facilities.

7.2 Directionally Drilled Watercourse Crossings

The use of directional drilling is proposed for boring under the Chippawa Channel, the Welland River and Lyons Creek in conjunction with the Queen Elizabeth Way ("QEW"). The directional drilling technique involves drilling a pilot hole on a predetermined arc beneath the river using a slant hole rig together with a down hole motor and various rock bits. Once the pilot hole is completed, the hole is reamed to a size which will accommodate the carrier pipe. The carrier pipe will be strung and welded into one continuous string on the opposite side of the river from the drill rig and, upon completion of the reaming process, is pulled back through the hole. This technique was stated as being technically feasible and environmentally preferable to trenching at these three locations. The drilling of the Chippawa Channel would be staged from Grand Island, under the supervision of ANR, subject to the conditions imposed by the Board and other regulatory agencies. TransCanada would be responsible for the Welland River and Lyons Creek/QEW crossings. For the U.S. portion of the Chippawa Channel crossing, Empire has sought and received approval only for directional drilling from the FERC, noting that any alternate crossing procedures such as trenching would have to be approved by the U.S. Army Corps of Engineers under section 10 of the Rivers and Harbors Act.

In both written and oral evidence, TransCanada assessed the feasibility and risk of a directionally drilled crossing by considering factors such as subsurface soil conditions, drill length, pipe diameter, and radius of curvature of the drill path. A geotechnical investigation was conducted across the Chippawa Channel which indicated that the subsurface materials consisted primarily of till overlying bedrock. The directional drilling would primarily be in bedrock, identified as horizontally layered dolostones and shales. Based on the information collected and on TransCanada's experience with the Lewiston crossing, TransCanada expressed a high level of confidence that the three directionally drilled crossings could be completed as planned. ANR reflected similar confidence, with respect to the Chippawa channel crossing, indicating that it would be working with one of the leading expert directional drilling contractors to provide known, previously-applied technology to the Niagara River borings.

CNG and some concerned residents from Grand Island, New York questioned the technical feasibility of the directional drilling technique, citing examples of unsuccessfully drilled crossings and pipeline failures in general.

One of the concerns expressed was regarding the necessary regulatory approvals for a conventional crossing if the drilling technique were to fail. TransCanada has indicated that approval for a conventional crossing as a contingency plan is being sought only from the Board. With respect to the FERC and NYPSC approvals for the conventional crossing of the Chippawa Channel, ANR indicated that these agencies have prescribed that if the directional drilling method were to be abandoned, then further permission must be secured to utilize the trenching method. Empire would be required to provide further information as to the proposed method. Empire has not provided that information because Empire has no intention or expectation of utilizing trenching, as they feel it is clear that directional drilling will be successful. For the crossings of the Welland River and Lyons Creek, TransCanada has not indicated whether it will obtain approval from the appropriate provincial agencies for the conventional crossings as a contingency plan. TransCanada was not aware of any reason why a directionally drilled crossing would be abandoned in favour of a conventional crossing. TransCanada stated that scheduling would not be considered as a factor.

Views of the Board

The Board is satisfied that the Applicants have supplied sufficient evidence in support of the technical feasibility of directional drilling and notes that directional drilling is compatible with the FERC approval for the U.S. portion of the Chippawa Channel Crossing. However, the Board does not consider the geotechnical investigations to be extensive, nor does the Board share ANR's absolute confidence regarding the certainty of the directional drill's success.

With respect to the proposed conventional crossings of the Chippawa Channel of the Niagara River, in the event that the directionally drilled crossing fails, the Board is of the view that because other regulatory approvals remain outstanding, it is premature for the Board to grant approval for this contingency plan. Similarly, as TransCanada has not indicated whether it will seek to obtain the necessary provincial approvals for the conventional crossings of the Welland River and Lyons Creek and its intermittent tributary prior to commencing the directional drill, the Board is of the view that it is not appropriate to grant approval of these contingency plans at this time.

In the event that significant cost overruns occur with this project as a result of unanticipated problems with or abandonment of the directional drilling, the Board will review under Part IV of the Act, the prudency of the Applicants' decisions regarding: the planning, preparation and execution of directional drilling contracts; the associated cost estimates; and any concomitant actions and costs related to obtaining approvals for and constructing alternate conventional crossings. While the Board supports the choice of this technology, the Board has concerns regarding the thoroughness of the Applicants in preparing for the use of this technology. The Board has therefore accepted undertakings and conditioned its approval to address these concerns.

Decision

With the exception of trenching the Chippawa Channel of the Niagara River, Welland River and Lyons Creek in conjunction with the QEW, the Board approves the design of the facilities as applied for by TransCanada.

Routing and Land Matters

8.1 Early Public Notification

During 1990, the Board released its Memorandum of Guidance dealing with early public notification of proposed energy projects. The intent of that Memorandum of Guidance was to provide for public input during the planning and development stage of projects which could then be incorporated into applications to the Board. It was anticipated that providing early public notification of proposed applications and timely public input would improve the Board's regulatory process.

TransCanada, in conjunction with its environmental planning consultant (Ian Moncrieff, Environmental Consultants), began its early public notification of the Blackhorse Extension in June 1989. Initial contacts were by telephone, letters and site visits. Letters describing the proposed project were sent to all landowners along the proposed route, to local, provincial and federal government agencies, and to community and special interest groups. These parties were invited to participate in the route selection and environmental assessment process. As a follow-up to its initial contacts, TransCanada, in August 1989, sent letters to all landowners further describing the project and attaching a map of the proposed route.

In early September 1989, TransCanada filed its Route Selection Study with the Board. Copies of that report were also sent to members of the Ontario Pipeline Coordination Committee ("OPCC"), government agencies, and special interest groups. Comments received from those groups were incorporated into the Environmental and Socio-economic Impact Assessment Report ("Assessment Report"). The Assessment Report was sent to the aforementioned groups in early October 1989 for comment.

In keeping with the Board's Memorandum of Guidance on Early Public Notification, TransCanada placed four consecutive notices (21, 25 and 28 October and 1 November 1989) in the St. Catharine's newspaper *(The Standard)* describing the Blackhorse Extension project and inviting interested members of the public to an open house on 2 November, 1989. Some 24 landowners attended that open house.

Between October 1990 and the start of the GH-1-91 Hearing, TransCanada continued to contact landowners and interested parties, and was successful in obtaining survey consents from all but one of the potentially affected landowners, that landowner being a resident of another country.

TransCanada indicated, that as of December 1990, none of the landowners contacted had expressed concerns about the proposed project.

By way of a public notice which appeared in the *Canada Gazette* and newspapers throughout Canada, and locally in the Niagara Peninsula and western New York State, the general public was invited by the Board to comment in respect of environmental matters.

In preparation for the GH-R-1-92 hearing, TransCanada held a public meeting on 24 March 1992 at

the Port Robinson Community Centre. Notice of the meeting was published in the *Thorold News*, the Niagara Falls *Review, the Welland-Port Colborne Tribune and The Standard* on 18 March, 1992. TransCanada attempted to encourage not only landowners along the proposed route but also the general public who might have questions or concerns regarding the proposed pipeline to attend the meeting. Approximately 22 landowners and area residents attended the meeting. TransCanada indicated that many of the attendees at the 24 March, 1992 public meeting indicated that they favoured construction of the Blackhorse Extension given the positive impact it would have on the local economy, and were pleased with all the efforts of TransCanada in keeping them informed with respect to the Blackhorse Extension.

Mr. Rempel, a concerned landowner, testified that he and his wife had brought concerns to TransCanada's attention, which TransCanada had not identified as part of the record of public concern. Mr. Rempel reiterated this point in his final argument: in spite of concerns raised by him, TransCanada still stated in its evidence that as of December 1990 no property owner had expressed concerns. Mr. Rempel also noted that TransCanada had not accurately described his property as a dairy farm in its Assessment Report. In Mr. Rempel's view, this was an indication of TransCanada's unwillingness to address potential problems.

Views of the Board

The Board acknowledges the concerns expressed by Mr. Rempel and notes that TransCanada also stated in testimony that it had not discussed the potential effects of directional drilling activities with him. The Board believes that, although TransCanada notified affected parties in a timely fashion, the proposed application was not thoroughly discussed with all parties having an interest in the project and that not all concerns were adequately brought forward. The Board expects TransCanada to be more thorough in the future in its discussions with interested parties during early public notification.

8.2 Route Selection Criteria

TransCanada's application describes the process used to identify, evaluate and compare alternative routes for the proposed Blackhorse Extension. The major objective of the alternative route generation study was to select a general pipeline route location that would satisfy the requirements of the Board. This was accomplished by:

- establishing a study area;
- generating alternative route locations within the study area;
- evaluating each alternative with respect to its impact on the natural, man-made and social environments; and
- recommending a preferred route.

The primary environmental factors that TransCanada utilized in identifying alternative routes are included in its evaluation criteria and are listed in Appendix IV.

Views of the Board

Any company proposing to construct pipeline facilities is free, at the outset, to utilize whatever criteria it considers appropriate in the selection of a proposed route. The Board must then determine whether

the criteria selected are sufficiently comprehensive and, therefore, acceptable.

The Board is of the opinion that the criteria identified by TransCanada comprehensively encompass the considerations and constraints (including those relating to the environment) that pertain to the selection of a pipeline route within the study areas. The Board therefore considers these criteria to be acceptable. Section 8.4 of these Reasons for Decision examines the process by which TransCanada's criteria were used to identify and select the preferred route.

8.3 Route Selection Methodology

TransCanada indicated that it used a phased approach to establish the proposed route for the Blackhorse Extension. This approach involved:

- determination of the major environmental constraints;
- identification of alternative routes;
- evaluation of all alternative routes; and
- selection of the preferred pipeline route.

In evaluating the alternative routes and selecting a preferred route, TransCanada used the 18 evaluation criteria listed in Appendix IV.

Each alternative route was measured against the criteria relevant to the study area. These constraints were classed as being either natural or man-made, and were applied to each of the alternative routes to determine the extent of the potential adverse environmental effects resulting from the construction of a natural gas pipeline.

The constraints identified relate to:

- future urban growth areas;
- future potential landfill areas;
- future industrial areas;
- environmentally sensitive areas;
- river and stream crossing locations; and
- archaeological and heritage resources.

In final argument, TransCanada submitted that the criteria and methodology it utilized were sufficiently comprehensive to assess the alternative routes in the study area to determine the specific route for the Blackhorse Extension.

Views of the Board

The Board is satisfied that the evidence demonstrates a rational and progressive approach to route selection. The Board finds that the criteria for and process of route selection are adequate and reasonably explain the selection of the preferred route.

8.4 Routing Alternatives

Within the study area, TransCanada identified and evaluated four alternative routes, namely, Alternatives A, A1, B and C. Alternative A1 was subsequently presented as TransCanada's preferred route (see Figure 8-1).

The study area boundaries were established by first determining the two terminal points, the interconnection with the existing Niagara Line and potential landfalls on the west bank of the Niagara River. TransCanada indicated that the study area encompassed an area within which all reasonable alternatives could be considered between the two terminal points.

8.4.1 Preferred Route

TransCanada's preferred route, Alternative A1, from the Blackhorse Meter Station to the Niagara River is approximately 20.6 km in length (Figure 8-1). The preferred alignment was chosen because it:

- follows existing rights-of-way over 82 percent of its length;
- avoids Cyanamid Corners Woodlot and Polloway Bush and the associated wetland;
- crosses the least amount of wetlands and no wildlife management areas; and
- avoids areas proposed for future urban expansion by the city of Niagara Falls and an Ontario Waste Management Corporation ("OWMC") candidate landfill site.

The preferred route follows the existing Ontario Hydro powerline and Provincial Gas pipeline south to the intersection of the Interprovincial Pipe Line Inc. ("IPL") pipeline and continues in a southeasterly direction adjacent to the south side of IPL's easement crossing the Welland River, Grassy Brook, Lyons Creek and Tee Creek. Returning to the south side of IPL's easement, east of the Queen Elizabeth Way ("QEW"), the proposed route alignment progresses to the west bank and landfall of the Niagara River.

TransCanada indicated that the preferred route, Alternative A1, maximizes the use of existing corridors, minimizes or avoids major sensitive natural areas and would have little impact on the future urban expansion areas of Niagara Falls.

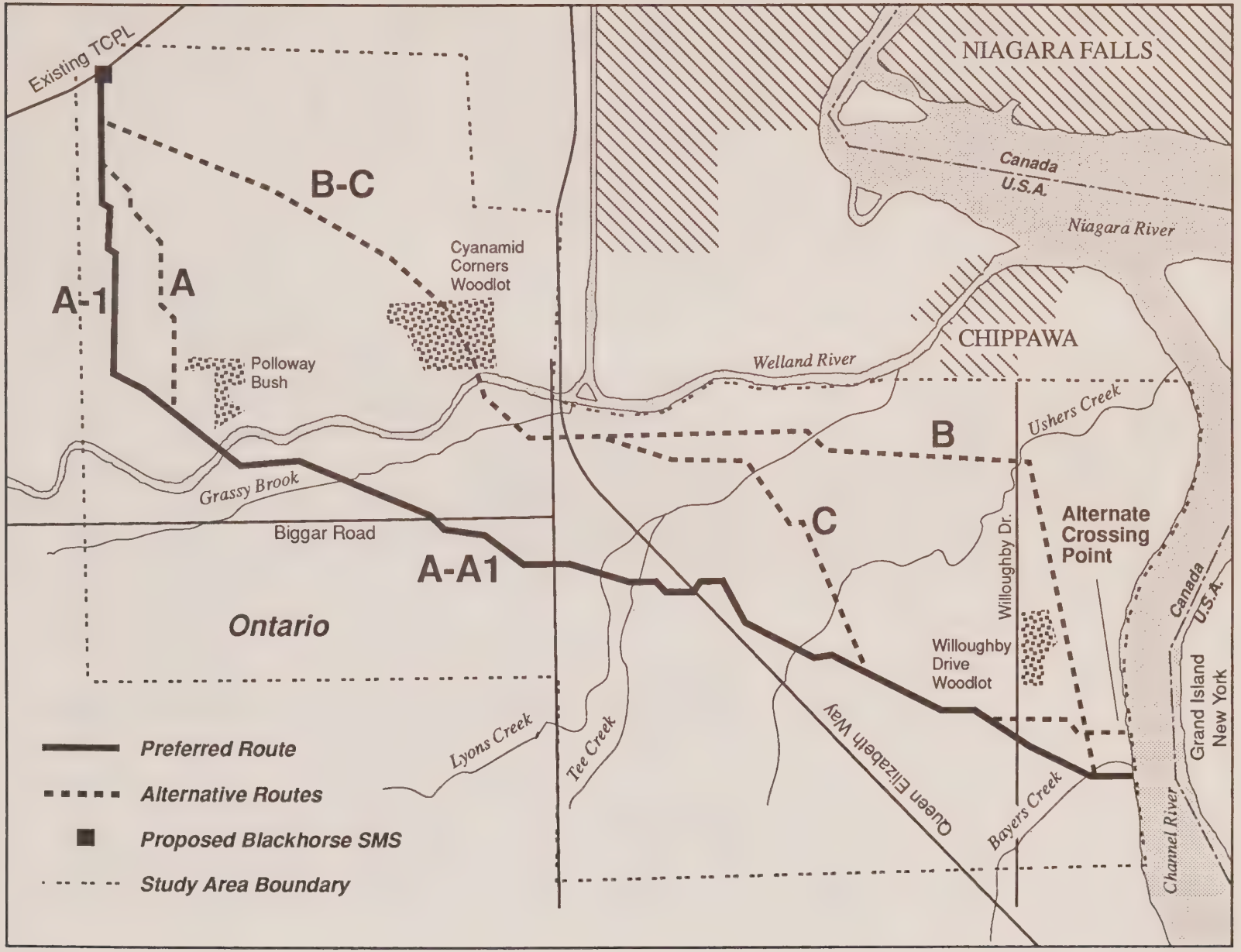
In final argument, TransCanada stressed that the resultant route, which is proposed for the Blackhorse Extension follows existing rights-of-way for over 80 percent of its length, would have very minor long-term impacts on forest resources and mitigable impacts on water crossings and wetlands and agricultural and other land uses.

As noted earlier, the entire 20.6 km (12.8 miles) will follow existing corridors with the exception of several deviations. Those deviations are discussed in the following section.

8.4.1.1 Deviations/Change in Construction Procedure

TransCanada stated that as a result of further investigations and contacts with affected land owners along the proposed route a number of deviations and changes in construction procedures were made to the presently preferred route (see Figure 8-2).

Figure 8-1
TransCanada PipeLines Limited
Alternative Routes



Deviation 1

The first deviation was proposed in Lot 115 and Lot 116, city of Thorold to afford a better crossing of the CN Railway right-of-way. Furthermore, it would accommodate plans for expansion of a metal fabrication plant on the north side of Barron Road and a "tight" location in proximity to a residence on the south side (see Figure 8-3).

Deviation 2

The second deviation deals with a change in construction procedures. In its original application, TransCanada proposed a wet-crossing technique for the Welland River. TransCanada now plans to have the Welland River directionally drilled. The proposed alignment will remain the same; however, none of the adverse effects predicted to result from a wet-crossing technique would occur.

TransCanada did, however, indicate that in the unlikely event that the directional-drill method fails, it would revert to the open-cut wet-crossing method.

Deviation 3

A minor route adjustment to the south of the proposed route was proposed in Lot 6, Broken Front Concession, City of Niagara Falls. The purpose of that change was to avoid a natural gas well adjacent to the IPL pipeline (see Figure 8-3).

Deviation 4

A minor route deviation was proposed in Lot 4, Broken Front Concession, city of Niagara Falls. The originally proposed route did not follow the existing IPL pipeline in this location. The new proposed route would follow the existing IPL alignment on the south side, north of Biggar Road and then undercross the IPL pipeline to the east side before crossing Biggar Road. Once across Biggar Road the proposed pipeline would undercross the existing pipeline to the south side and resume the originally proposed alignment.

The purpose of the route change was to avoid affecting the frontage on Biggar Road of the property in Lot 4, Concession 1, City of Niagara Falls thereby affecting future possibilities of subdividing that parcel. The proposed change would entail the clearing of the remnant wooded strip south of the existing cleared IPL pipeline.

Deviation 5

The only major deviation occurs at approximately kilometre post 10.73 as set out in Figure 8-4. The re-route was initially proposed on prevent impacts on the Willo-Dell Country Club (golf course) during the peak business period from April through November.

Figure 8-2
TransCanada PipeLines Limited
Location of Deviations

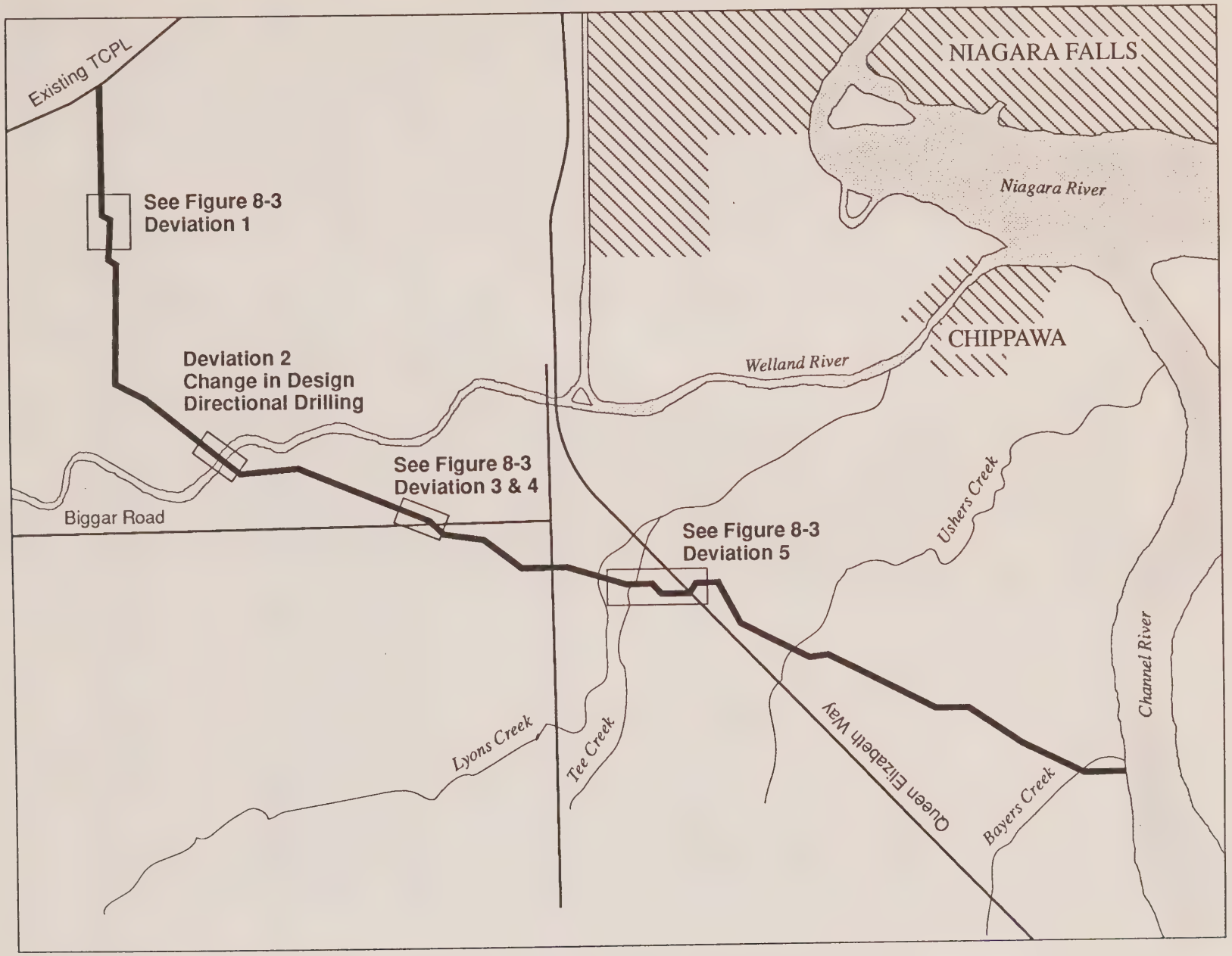
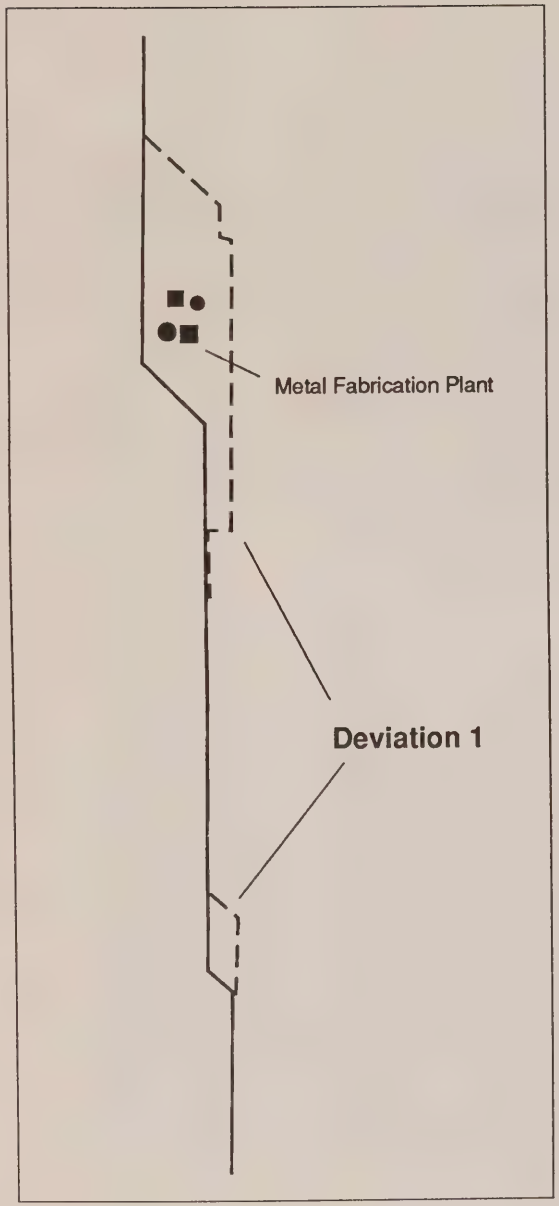
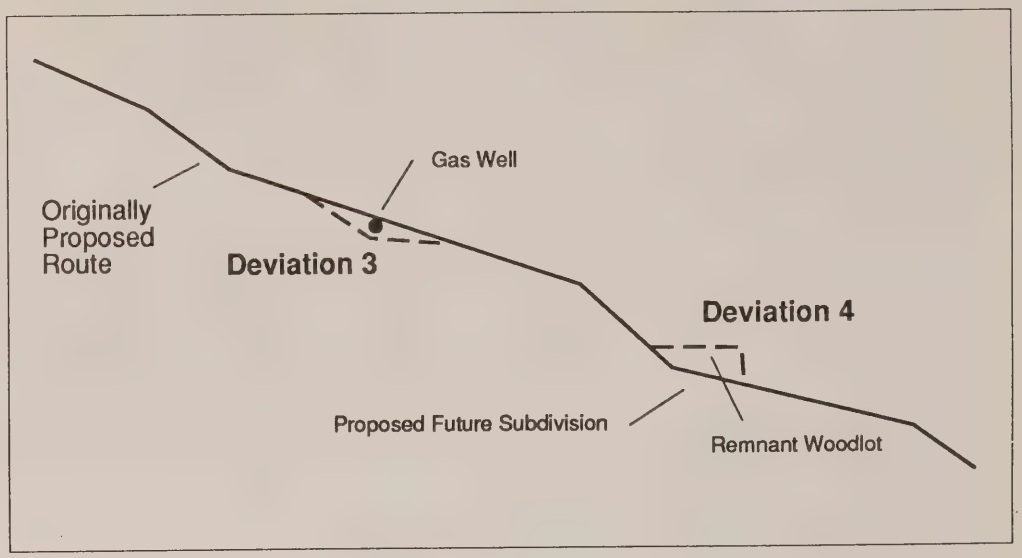
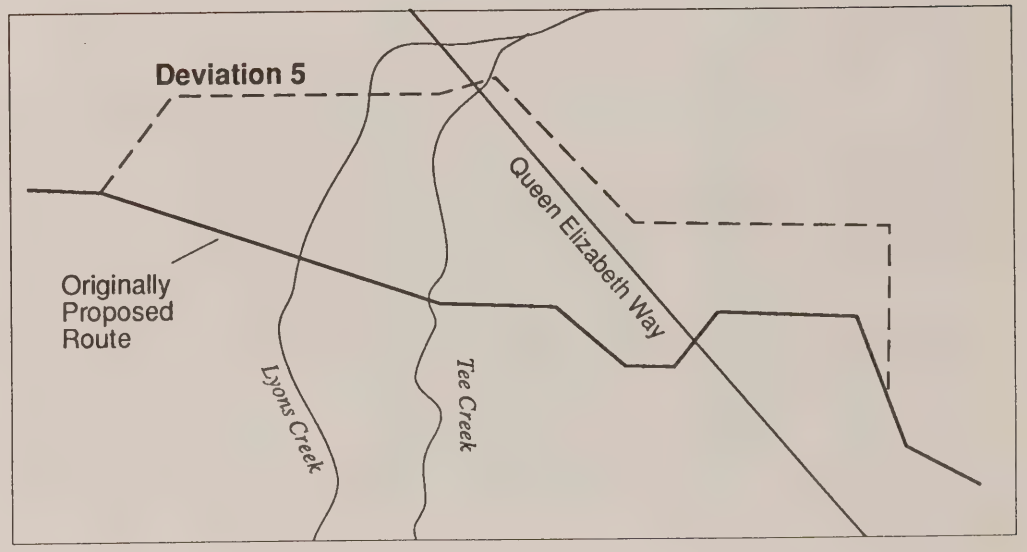


Figure 8-3
TransCanada PipeLines Limited
Details of Deviations







Subsequent to discussions with the Ontario Ministry of Natural Resources ("OMNR") regarding timing of construction across Lyons and Tee Creeks, with the Willo-Dell Country Club Ltd., with a landowner east of the QEW crossing, and subsequent to the results of further detailed archaeological field studies, a route diversion was designed to avoid the constraints related to all of the features.

The new alignment would traverse north of the golf course and result in approximately 600 m of additional pipeline. TransCanada stated that the proposed rerouting would result in a reduced land use impact by the pipeline.

8.4.1.2 Alternatives in the Study Area

The alternative routes identified and evaluated by TransCanada can be found on Figure 8-1 and are briefly described as follows.

Alternative Route A

Beginning at the interconnection with TransCanada's existing Niagara Line in the vicinity of the Blackhorse Meter Station, Alternative A would follow the west side of the Ontario Hydro corridor south to Ontario Hydro's transformer station. Continuing south along the powerline, the proposed pipeline would intersect the existing IPL right-of-way. Following the south side of IPL's existing easement, the proposed pipeline would proceed in a southeasterly direction across the Welland River, Grassy Brook, Lyons Creek and Tee Creek. West of the QEW, the proposed pipeline route would deviate from the existing IPL pipeline and undercross to the north side in order to avoid land use congestion at the QEW and pipeline intersection. Once on the east side of the QEW, the proposed pipeline would undercross the IPL right-of-way and continue in a southeasterly direction paralleling the IPL right-of-way to the landfall at the Niagara River (see Figure 8-1).

Alternative Route B

Beginning in the vicinity of the Blackhorse Meter Station, Alternative B follows the existing Ontario Hydro transmission line south to Highway 20. The proposed alternative would then proceed in a southeasterly direction to the city of Niagara Falls. The proposed pipeline would continue in a more southerly direction across the Welland River. Continuing in a southeasterly direction, the proposed Alternative B would cross the QEW, Lyons Creek and Usshers Creek and intersect the Ontario Hydro transmission line. Following the west side of the transmission line southward, the proposed line would intersect the IPL pipeline. The remaining section of pipeline would be common with Alternative A to the Niagara River landfall site (see Figure 8-1).

Alternative Route C

Alternative C is a modification of Alternative B and follows this Alternative route to a point in Lot 9, where the route deviates to the south, crossing Lyons Creek. The proposed pipeline would continue in a southeasterly direction across country to the IPL pipeline. The remaining section of pipeline would be common with Alternative A described earlier (see Figure 8-1).

8.4.2 Comparison of the Alternative Routes

TransCanada's comparison of the four alternatives indicated that there were major differences with respect to the distance of existing corridors followed, distance through key natural areas such as designated wetlands and wildlife management areas and possible effects on future land uses.

None of the routes differ greatly in length. The overall longest routes are alternatives A1 and B at 20.6 and 20.3 km respectively and the shortest is Alternative C at 19.1 km, in all cases with a common southern approach to the Niagara River.

Alternatives A and A1 follow existing utility corridors over much more of their length than Alternatives B and C. (Approximately 86 percent and 82 percent of A and A1, respectively, are adjacent to existing rights-of-way as compared to 26 percent and 24 percent for B and C respectively.) Moreover, the powerline corridor followed by Alternative B east of Willoughby Drive is considered not to be an ideal corridor to parallel because of the abandoned narrow railbed adjacent to the older towerline which consists of relatively low steel towers. In addition, a large ditch, fencing and trees lining both sides of the towerline would make construction difficult and result in long-term effects due to tree removal.

Alternatives A and A1 follow existing powerline and pipeline corridors. However, Alternative A would have a major impact on the Polloway Bush and associated wetland within the Town of Thorold. This is the primary reason for generating Alternative A1 to the west in order to avoid this natural area. Both alternatives are common once they join the IPL pipeline.

Alternatives B and C would bisect the Cyanamid Corners Woodlot whereas Alternative A and A1 would avoid this area. Alternative B also affects the Willoughby Drive Woodlot. Alternatives A, B and C cross through almost twice as much designated wetland as A1. These alternatives also traverse considerably more wildlife management area (nearly 1 km for A and almost 2 km for each of B and C) than A1 which crosses none.

Alternatives A and A1 avoid the area proposed for future urban expansion of the City of Niagara Falls and avoid crossing the OWMC candidate landfill site. Alternatives B and C, on the other hand, would cross a large area of future urban expansion proposed by the City of Niagara Falls and the OWMC candidate landfill site.

In summary, following A1 which lies largely adjacent to powerline and pipeline corridors which have already avoided significant features and areas of environmental concern, would serve to minimize the potential effects of the proposed Blackhorse Extension pipeline.

Several intervenors, including CNG and Tennessee, submitted that the Canadian landfall had been determined by Empire's preferred landfall on Grand Island, New York. Tennessee was of the view that TransCanada's route selection process only involved an exercise of finding an acceptable route from a defined take-off point to the proposed Chippawa export point. It argued that even a minor modification in the crossing point, to avoid constraints on the Canadian side, was impossible because of Empire's commitment to the Grand Island landfall.

Views of the Board

In a hearing, the purpose of evidence on alternative routes is twofold:

(1) If a company is required to choose its preferred route from a reasonable set of alternatives, it is more likely to arrive at an acceptable route than if it chooses its preferred route in isolation.

(2) By being aware of a pipeline company's reasons for having rejected various alternative routes, the Board is assisted in understanding the manner in which the company has applied its route selection criteria.

The Board does not make a ruling on which alternative route is the best. It only determines whether the preferred route is acceptable. The ultimate decision to be made by the Board, following a hearing is whether or not the pipeline (along the preferred route) is required by the present and future public convenience and necessity. Evidence on alternative routes is of assistance to the Board in arriving at this decision.

In reviewing the evidence presented, the Board believes, on the basis of a balanced assessment of the alternatives, that TransCanada's preferred route was selected objectively.

The Board concurs with TransCanada that by following the preferred route, Alternative A1, the proposed pipeline would, for the most part, follow existing corridors which have already avoided areas of environmental concern and would serve to minimize potential effects.

With respect to the deviations from the originally proposed route, the Board is of the opinion that those deviations, which resulted from public input, complement the preferred route proposed by TransCanada.

8.5 Land Requirements

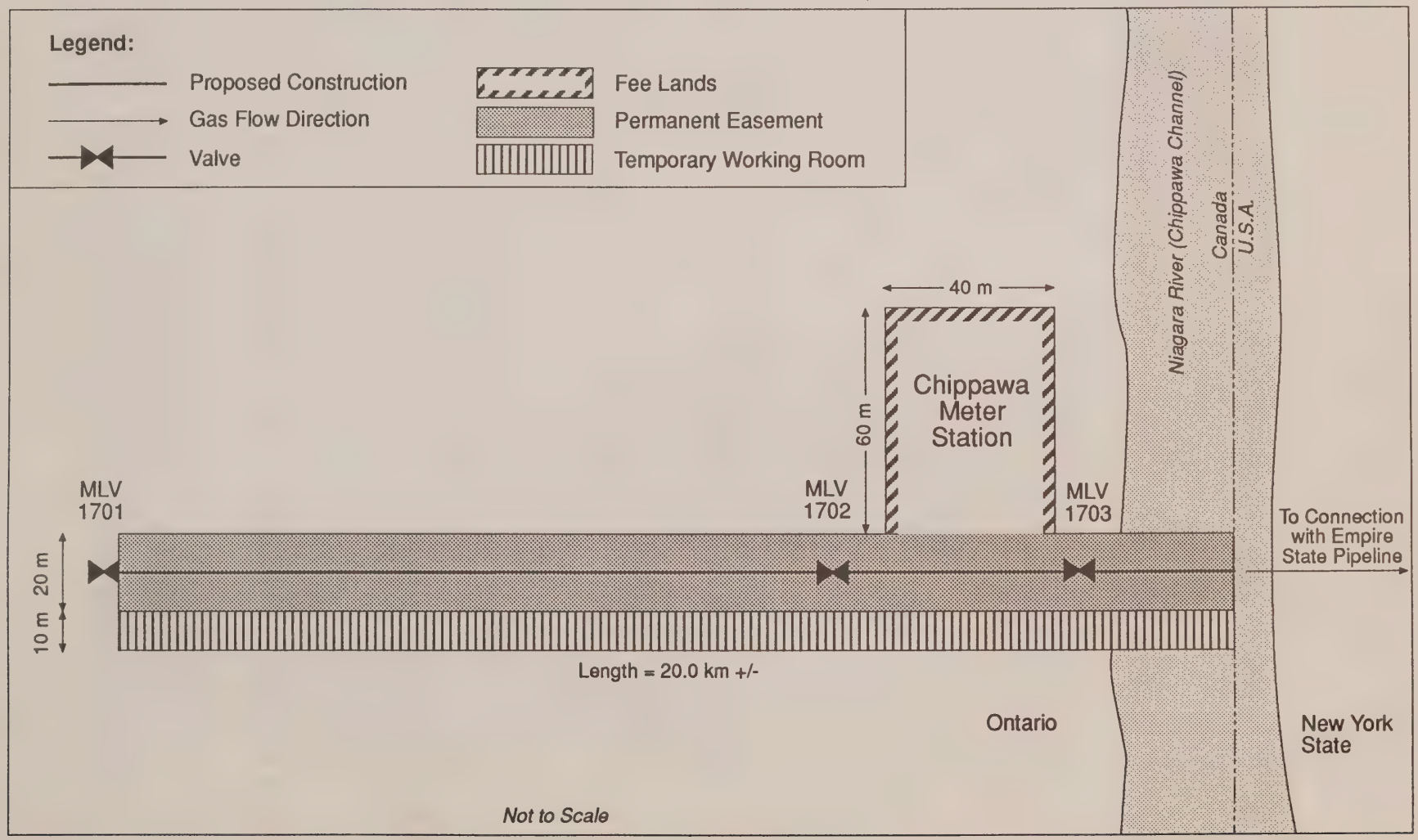
The Board has had a longstanding concern about the potential effects of land requirements for pipeline construction (fee simple and easements) upon affected landowners. As it has in the past, TransCanada provided the Board with a schematic of the land requirements for the proposed Blackhorse Extension (Figure 8-4).

(i) Fee Simple Land

TransCanada indicated that a new meter station, the Chippawa Meter Station, will be required and constructed on fee lands which TransCanada intends to acquire by purchase. TransCanada indicated that it has not yet determined the exact location of the Chippawa Meter Station.

TransCanada plans to build the meter station at a location within Lots 249 through 304 within the closed subdivision known as the Willowbury subdivision. The subdivision was surveyed prior to 1920, however, there has never been any buildings on lots west of Brock Street. The City of Niagara Falls deemed the subdivision closed in 1981 which indicates it will not construct roads or provide any services and that residential development in that area is prohibited.

Figure 8-4
Proposed Land Requirements Blackhorse Extension Line 1700-1
MLV 1701 to the International Boundary



TransCanada has acquired options to purchase the land owned by individuals for the Chippawa Meter Station. The balance of the lands is owned by the City of Niagara Falls which has agreed in principle to sell to TransCanada all the land it needs in this area.

(ii) Easements

TransCanada will acquire a 20.0 m permanent easement for the entire length of the project.

(iii) Temporary Work Space

TransCanada requires a 10.0 m width of temporary workspace for machinery movement, for the storage of soil, and to ensure that no environmental or landowner considerations are jeopardized. This is in accordance with TransCanada's Pipeline Construction Specifications (1990).

TransCanada added that it will require considerable temporary work space for the directional drilling activities.

Mr. Helmut Rempel expressed concern regarding the total amount of easement to be acquired across his property (including an existing IPL easement) and questioned TransCanada regarding the potential use of IPL's abandoned pipeline or its right-of-way. TransCanada submitted that IPL's abandoned pipeline was of insufficient capacity and that the right-of-way was too narrow if it elected to replace the abandoned pipeline. TransCanada also produced documentation from IPL indicating that in the past IPL has permitted TransCanada use of its right-of-way for storage of soil, subject to conditions which prevent equipment from working over the existing pipeline.

Given Mr. Rempel's concern, and given the fact that TransCanada had indicated that minimizing clearing through woodlots and environmentally sensitive areas was a concern, the Board further questioned TransCanada regarding the use of shared rights-of-way to minimize disturbance. TransCanada indicated in testimony that IPL had given authorization in writing to use a five-meter strip and that this would be used to reduce temporary workspace wherever possible. TransCanada then undertook to review the documents and agreements with IPL and to examine each site and report back to the Board on space requirements. In response to this undertaking, TransCanada indicated that the full conditions under which IPL would allow use of their its right-of-way had not been finalized and no agreement had been reached. TransCanada also indicated that problems arose because it does not know the exact location of IPL's line within the right-of-way, and because other obstacles could reinforce the need to maintain working space outside of IPL's easement. TransCanada reiterated commitments to reduce space as much as possible through woodlots and on Mr. Rempel property. TransCanada will submit a plan regarding the Rempel property to the Board and to Mr. Rempel once it is completed. Elsewhere, TransCanada committed to the use of IPL's right-of-way for reducing working space where practicable.

In closing argument for the GH-1-91 hearing, Mr. Rempel questioned the need for a 30-foot spacing between pipelines. He noted that TransCanada planned to place their pipeline 75 feet from the existing IPL line, and felt this was excessive. Mr. Rempel stated that a closer spacing would allow greater consideration for future expansion, as it would allow more lines to be constructed within the same easement.

Views of the Board

The Board is satisfied with TransCanada's attempts to negotiate the use of shared temporary working space with IPL, and with TransCanada's commitments to reduce working space where possible.

8.6 Land Acquisition

TransCanada advised the Board that it had acquired easement or option agreements for 16 333 metres or approximately 90 percent of the required right-of-way across private property.

TransCanada further advised that it had obtained agreements in principle for the necessary land rights from Standard Radio Inc. (Niagara District Broadcasting), Dr. Ernst and Mrs. Marion Herterich, and the City of Niagara Falls. These properties contain a total of 1093 metres of right-of-way which effectively brings the total amount of right-of-way for which agreement has been reached to greater than 96 percent.

On 14 May, 1992, TransCanada obtained an agreement in principle for an option/easement from Mr. Joseph Pietrangelo across his property. On 19 May, 1992 TransCanada received a letter from the solicitor for 822956 Ontario Limited reiterating his client's request for compensation in return for the granting of an easement to TransCanada. Negotiations with these landowners are continuing and TransCanada is optimistic agreement will be reached between the parties in the near future.

The remaining landowners with whom TransCanada has not obtained agreement are H. and I. Rempel. Negotiations with the Rempels are ongoing.

Views of the Board

The Board notes TransCanada's success in acquiring options/easements for the majority of the proposed pipeline with the exception of 822956 Ontario Limited and H. and I. Rempel. Any approval of the Board would be conditional on those remaining lands being acquired.

8.7 Requirements of the Act in Respect of the Routing of New Pipeline Facilities

The Applicants requested exemption from the provisions of sections 31 and 33 of the Act which require a company to file and obtain approval of plans, profiles and books of reference which, among other things, lay out the detailed route of the pipeline. The Applicants further argued that such exemption should not be conditional upon executing all option and easement agreements.

In this vein, in discussing conditions, the Applicants raised a concern about the standard condition requiring the execution of all option or easement agreements before any construction could commence.

In their view, such a condition would preclude expropriation and right-of-entry under Part V of the Act and as a consequence could frustrate construction of the pipeline.

Mr. Rempel was of the view that TransCanada should not be exempted from sections 31 and 33 without conditioning that on landowner approval.

Views of the Board

In deciding whether to exempt TransCanada from sections 31 and 33 of the Act, the Board took into account the detailed nature of the application and examination of the route during the hearing. In the Board's view, the filing of plans, profiles and books of reference would only be necessary, in this case, if a detailed route hearing were to be held and thus has decided to grant TransCanada the requested exemption. In reaching this decision, the Board is mindful of the rights of adjacent landowners[1] who might be affected by the proposed construction. The Board is of the opinion that due to the proposed location of the facilities (adjacent to existing rights-of-way), it is unlikely that those landowners would be adversely affected in the long term by the proposed construction. The Board notes that no adjacent landowners intervened in the GH-1-91 or GH-R-1-92 proceedings.

The Board is concerned that landowners, whose property TransCanada proposes to acquire, have their rights under the Act protected. However, the Board is also aware of the potential problems to the Applicants if they are unable to sign all option or easement agreements. Therefore, the Board has decided to condition the order to permit construction to commence only if TransCanada has obtained all required land rights along the entire route, or, if the land rights have not yet been obtained, to demonstrate that the landowner rights prescribed in the Act will not be prejudiced. The Board is of the opinion that the wording in this condition protects the rights of landowners while allowing TransCanada flexibility in instituting the right of entry process.

[1] An adjacent landowner is one who owns property not along the proposed right-of-way but whose property may be adversely affected by the applied for facilities.

Environmental Matters

9.1 Assessment Process

As part of the original application for the Blackhorse Extension, TransCanada submitted an Environmental and Socio-economic Assessment which was amended prior to GH-R-1-92. TransCanada also submitted a Fisheries Resources Assessment for the Blackhorse Extension. These reports are collectively referred to as, "the assessments". The assessments included a description of the environmental setting, an examination of the probable adverse environmental effects, and recommendations to prevent or mitigate any adverse environmental effects resulting from the applied-for facilities. TransCanada committed to implement or cause to be implemented all of the policies, practices, recommendations and procedures for the protection of the environment included in or referred to in its application, its environmental reports filed as part of its application, its Pipeline Construction Specifications (1990), its Environmental Protection Practices Handbook (1991), and its undertakings given to the Federal Department of Fisheries and Oceans ("DFO") and to member agencies of the Ontario Pipeline Coordination Committee ("OPCC"), all as produced on the GH-R-1-92 record.

The environmental and directly related social effects of the project were considered concurrently under two separate processes:

(i) a project review pursuant to the Board's mandate under Part III of the Act; and

(ii) an environmental screening of the application pursuant to the *Environmental Assessment and Review Process Guidelines Order* ("EARP Guidelines Order"), insofar as there was no duplication with the Board's mandate under Part III of the Act.

The screening was conducted concurrent with the GH-1-91 proceeding and updated as a result of new information submitted in the GH-R-1-92 proceeding.

Views of the Board

Based on its review of the environmental information contained in TransCanada's application and evidence adduced at the hearing, the Board made the following determinations:

i) respecting the potential effects which could result from the proposal, the Board determined pursuant to paragraph 12(c) of the EARP Guidelines Order, that the potentially adverse environmental effects, including the social effects directly related to those environmental effects which may be caused by the proposed facilities, with the exception of the proposed crossing of the Chippawa Channel of the Niagara River, would be insignificant or mitigable with known technology;

ii) respecting the potential effects which could result from the proposed crossing of the Chippawa Channel of the Niagara River, the Board has determined pursuant to section 14 of the EARP Guidelines Order, that in order to prevent any of the potentially adverse environmental effects, including the social effects directly related to those environmental effects, which may be caused by crossing the Chippawa Channel of the Niagara River by trenching, from becoming significant, the Board requires the crossing to be constructed using directional drilling;

iii) respecting the potential effects which could result from the proposed directional drilling of the Chippawa Channel of the Niagara River, the Board has determined, pursuant to paragraph 12(c) of the EARP Guidelines Order, that the potentially adverse environmental effects, including the social effects directly related to those environmental effects, which may be caused by the proposed crossing of the Chippawa Channel of the Niagara River by directional drilling, would be insignificant or mitigable with known technology.

iv) respecting the environmental, directly related social and land-related effects attributable to the project as proposed, the Board determined that those issues would be appropriately considered as part of its procedures under Part III of the Act, consistent with section 8 of the EARP Guidelines Order.

9.2 Environmental Matters

In its application, TransCanada identified a number of environmental issues which could result from the pipeline construction. Those effects, and the mitigative measures proposed by TransCanada, were presented in the assessments and in subsequent submissions. Certain site-specific environmental effects and the mitigative measures proposed were discussed during the hearings. These site-specific effects dealt primarily with the potentially adverse environmental effects and any directly related social effects of directional drilling activities. Many of the issues associated with directional drilling are related to several aspects of environmental protection.

9.2.1 Directional Drilling

Background to Proposal

TransCanada, in its Environmental and Socio-economic Assessment, determined that the open-cut or trench method of crossing the Niagara River was feasible, and that the associated adverse environmental effects would be minor, localized and temporary. Adverse effects such as temporary disruption of habitat by trench excavation and noise generation by blasting activities would be unavoidable. TransCanada stated that careful planning and the implementation of good construction practices, such as that specified in its Environmental Protection Practices Handbook, and its Pipeline Construction Specifications, would reduce the overall magnitude of the adverse effects on the aquatic environment.

After examining the technological advances in the drilling industry and the physical characteristics of the subsurface soils and bedrock at the Chippawa Channel, TransCanada determined that it would be feasible to install the pipeline using the directional drilling technique rather than using the conventional open-cut installation. Directional drilling would eliminate all in-stream disruptions, such as sedimentation.

TransCanada amended its proposal indicating that the directional-drilling method would be used to cross the Welland River. Also, the Queen Elizabeth Way would be directionally drilled in conjunction with Lyons Creek and its intermittent tributary. Directional drilling was the crossing method preferred by the OMNR and DFO.

Potentially Adverse Environmental Effects

Concerns regarding directional drilling raised by the Board included:

(i) accuracy of the down-hole steering system;
(ii) avoidance of damage to soil structure at the rig-sites in the event of poor weather conditions;
(iii) mud composition;
(iv) inadvertent mud returns through unconsolidated beds;
(v) uncontrolled mud flow through abandoned pilot holes;
(vi) mud disposal;
(vii) social effects associated with the drilling activities (noise/vibrations);
(viii) cumulative social effects, as a result of prolonged activity in the event that a directionally drilled crossing were abandoned in favour of a conventional crossing; and
(ix) reasons for which a directionally drilled crossing would be abandoned in favour of a conventional crossing (discussed in Chapter 7).

The Applicants indicated that magnetic interference in the steering system would be indicated by system readings and that in this event, a terminal guidance system could be employed. They undertook to advise the Board of any verified operational problem with the steering system and to advise the Board of the steps taken to correct the problem.

To avoid loss of soil structure through rutting and compaction at the rig-site areas, the Applicants made commitments to use wide-tired or tracked vehicles where feasible, and to cover the rig-sites with geotextile and gravel following topsoil stripping.

The Applicants undertook to inform the Board of the chemical toxicity of any potential additive to the drilling muds. TransCanada also indicated that the potential was low for uncontrolled mud flow through abandoned pilot holes or for inadvertent mud returns through unconsolidated beds; however, as a contingency plan they committed to grout any of these areas where mud flows to the surface, where that mud could not be recirculated. TransCanada's proposal for mud disposal as outlined in the assessments was to dispose of the solid portion by land-filling and to test and dispose of effluent water according to regulatory requirements. TransCanada amended this plan to also include the possibilities of land spreading, in-situ pit retention, and temporary container storage. The Applicants also accepted three conditions (as amended) from the Board regarding mud disposal. In final argument TransCanada submitted that it had demonstrated to the Board that these wastes could be safely disposed of at local landfills or by land spreading.

To mitigate adverse social effects associated with the drilling activities, TransCanada committed to use various means to reduce noise and vibration. Construction activities would be restricted to normal working hours, unless a particular construction activity necessitates prolonged hours of operation.

TransCanada's proposed mitigation for cumulative social effects in the event that a directionally drilled crossing is abandoned in favour of a conventional crossing, was to address each crossing type individually, and to continue with its standard practice of thoroughly informing local residents and government agencies about the proposed construction and any changes in schedule. Of note, TransCanada agreed that in future, it would consider discussing directional drilling and its potential adverse environmental and social effects with potentially effected landowners.

9.2.2 Watercourse Crossings

The proposed Blackhorse Extension crosses ten permanent watercourses, three of which TransCanada proposes to cross with directional drilling (as noted above). TransCanada has also requested approval of the Board of conventional crossings for these three watercourses as a contingency in the event that directional drilling fails.

For the proposed conventional crossings, disturbance to aquatic habitats would result due to in-stream sedimentation and vegetation loss on the banks. The potential adverse effects on fisheries along the proposed route could include temporary, high suspended sediment levels, siltation, disturbance or loss of habitat and disturbance of fish during sensitive periods such as spawning. TransCanada indicated that the implementation of measures described in the assessments would mitigate the potential adverse effects.

The conventional crossings of the Welland River and Lyons Creek were of particular concern due to the potential for occurrence of contaminated sediments disturbed during trenching operations. TransCanada indicated that the use of the directional drilling technique for these crossings would reduce or eliminate potential adverse effects associated with trenching through contaminated sediments. As a contingency, in the event that directional drilling failed, the OMNR requested that TransCanada develop restoration plans and crossing techniques for the Welland River and Lyons Creek crossings. If directional drilling fails, TransCanada would use the standard, open-cut crossing method and would adhere to the mitigation and restoration procedures outlined in the assessment reports.

Ongoing discussions and correspondence between TransCanada, the DFO and the OPCC and its member agencies (the Ontario Ministry of the Environment ("OMOE") and the OMNR) resulted in a number of commitments by TransCanada (Appendix III). Restrictions would be placed on the timing of in-stream construction to avoid disturbance to warm-water fisheries during spawning and sensitive development periods. As a result of the undertakings given by TransCanada to OMNR and OMOE (Appendix III), TransCanada indicated that these agencies have no further concerns with the proposed methods for watercourse crossings.

In summarizing its concerns to TransCanada, the OMOE indicated that its review of the proposal did not include the Chippawa Channel of the Niagara River. TransCanada's Assessment Report indicates that contaminated sediments which have been collected and analyzed at various locations within the Chippawa Channel, in some cases exceed the OMOE guidelines for open-water dredge spoil disposal, specifically for iron and zinc concentrations.

9.2.3 Soil and Agriculture

The proposed pipeline route crosses agricultural land for most of its length. Agricultural land consists of corn and wheat lands, improved and unimproved pasture and considerable idle land (3.43 km). Given the clay textures and the poor drainage along the route, adverse effects to agricultural activities would most likely be related to soil compaction and associated alterations in drainage, infiltration and permeability. Such effects could result in crop loss during construction and short-term reduction in crop yield.

The proposed construction could also result in nuisance factors such as increased dust and noise and reduced access to cropped lands. Concern was raised regarding the potential for effects on soils and significant disruption of agricultural operations. TransCanada has made commitments, especially in the case of Mr. Rempel, which deal with the avoidance of disruption to agricultural operations. TransCanada submitted that access to farm properties would be maintained during construction where required by the landowner. TransCanada stated that the proposed schedule for pipeline construction has the potential for further off-right-of-way disruptions to agricultural activities such as pesticide spraying. TransCanada indicated that farmers would be informed of construction schedules in order to aid them in the scheduling of planting and harvesting. TransCanada concluded that the proposed mitigation techniques would minimize the adverse effects upon agriculture that could result from construction.

TransCanada's standard practices as set out in its Pipeline Construction Specifications ensure soil conservation under normal pipeline construction. As discussed previously, TransCanada is committed to providing a detailed, drilling mud disposal plan which would include mitigation of any adverse effects, and would therefore provide for soil conservation in the event that mud or effluent waters are disposed of on agricultural lands.

As TransCanada's proposed route crosses primarily annual crop-lands, adverse effects to agricultural activities are expected to be of short duration.

9.2.4 Vegetation

With the use of directional drilling to avoid the Lyons Creek Environmentally Sensitive Area ("ESA") TransCanada's proposed route crosses only one ESA, Willoughby Marsh. This marsh supports swamp white oak and pignut hickory (rare in Ontario & Canada) and pin oak (rare in Ontario). TransCanada has stated that it will adhere to its standard measures, as set out in its Environmental Protection Practices Handbook, which includes measures to mitigate potentially adverse effects on wetlands. One provincially rare shrub, the southern arrow-wood shrub, was confirmed to be present in the vicinity of the proposed pipeline crossings of Lyons Creek and Tea Creek. TransCanada undertook to flag and possibly fence areas containing this shrub to minimize adverse effects.

9.2.5 Woodlots

Approximately 14 percent (2.8 km) of the proposed route would traverse wooded areas. TransCanada outlined mitigative techniques to reduce the potential adverse effects in wooded areas, which include minimizing the workroom width in these areas, protecting specimen trees and, in erosion-prone locations such as steep slopes, implementing rehabilitation measures immediately after pipe installation. TransCanada committed to utilize, if possible, 5 m of shared temporary work-space from IPL, to further reduce disturbance through these areas, wherever feasible.

9.2.6 Archaeological and Heritage Resources

TransCanada submitted preliminary archaeological studies of the proposed route and of the Niagara River crossing. These studies indicated that there was a high potential for uncovering major archaeological and heritage sites.

TransCanada noted that after completing an interim field study, four archaeological sites of significance were documented. It also indicated that it would conduct detailed surveys of the sites and would file the results of the survey, including any corresponding mitigative measures with the Board at least ten days prior to the commencement of construction. Should further sites be discovered during construction, TransCanada would follow the recommendations in its Environmental Protection Practices Handbook and Pipeline Construction Specifications.

9.2.7 Other Concerns

Mr. Rempel expressed concerns that the construction and operation of the proposed pipeline could interfere with his cattle operation. Mr. Rempel's concerns included ensuring that access to pasture was provided for his cattle during construction, and that stray voltage did not result from the pipeline which would increase the threat of mastitis[2] in his cattle.

Mr. P. Tregunno, of Tregunno Fruit Farms, expressed concern to the Board in a letter of comment regarding his past experience with directional drilling on his property. Mr. Tregunno indicated that adverse effects could include noise, vibrations, extended construction schedules and damage to soil structure. In response to these concerns, TransCanada made a number of commitments to reduce these adverse effects for the three proposed crossings; however, Mr. Rempel expressed concern that vibrations from the directional drilling activity would cause damage to the structures on his property, specifically two concrete stave silos. Although TransCanada undertook to have a structural evaluation made of the buildings before and after construction, Mr. Rempel still expressed concern for his own safety and that of his family and his livestock. Mr. Rempel also expressed concern that TransCanada had not mentioned to him the possible side effects of directional drilling under the Welland River.

[2] an infection of the udder which interferes with milk production.

Kim Pennachio, Tony Pennachio, and Joe Marsala raised concerns regarding conflicts with their horse-training activities, and their dealings with TransCanada's land agent. TransCanada has made commitments to install temporary fencing to facilitate the relocation of the horses away from the right-of-way and has now signed an agreement with these landowners for considerable temporary work-space to be used in association with the directional drilling activities.

Views of the Board

The Board is satisfied with the commitments made by TransCanada to mitigate any adverse environmental and directly related social effects associated with directional drilling activity. With respect to drilling mud disposal, the Board is not persuaded that TransCanada has demonstrated that drilling muds will be disposed of safely, specifically with respect to disposal of solids or effluent water on agricultural land, and would therefore condition the order to require that TransCanada submit the mud disposal plan for Board approval.

In light of OMOE's concerns regarding contaminated sediments, and given the fact that TransCanada has identified the potential for contaminated sediments in the Chippawa Channel of the Niagara River if trenching is used, the Board finds that there may be the potential for adverse environmental effects.

TransCanada has consulted with all appropriate authorities and agreed to a number of specific commitments to address concerns raised by these agencies. The Board accepts these commitments, but has added four further conditions relating to drilling mud containment and disposal, and the monitoring of various effects from directional drilling. The Board is of the view that, if TransCanada implements the environmental protection measures it had proposed and the additional measures it has agreed to with the OPCC and the Board, the construction and operation of the Blackhorse Extension, using directional drilling to cross the Chippawa Channel would create only minor environmental effects of a local and temporary nature. The Board has conditioned the order to ensure adherence to those measures.

In order to determine whether the environmental objectives have been achieved, the Board would require TransCanada to file, for Board approval, a post-construction environmental report within six months of the date that leave-to-open is granted. The report should address all of the environmental issues which have arisen up to that time. The report should also discuss the status of each issue, as well as the measures to be implemented for the resolution of any outstanding issues.

The Board will also require TransCanada to file a similar report by 31 December following each of the first two full growing seasons after construction.

Economic Feasibility

The Board determines the economic feasibility of a project by examining the likelihood that the facilities would be used at a reasonable level over their economic life, and by determining whether the demand charges would be paid. To assist in its examination, the Board considers several factors which it has deemed in prior proceedings to be relevant in such a determination and TransCanada submitted evidence addressing each of these factors.

As evidence that long-term gas supplies would be available to keep the pipeline fully utilized over its economic life, TransCanada submitted a report by Sproule Associates Limited (discussed in Chapter 4). This report demonstrates the existence of long-term gas supply in the Western Canada Sedimentary Basin. With respect to U.S. natural gas supply, St. Clair provided evidence based on the Energy Information Administration estimates of proved reserves in the Lower 48 states and the Potential Gas Committee estimates of undiscovered potential for the same area which indicates that an adequate U.S. natural gas supply will be available for potential shippers on Blackhorse/Empire.

Respecting the long-term outlook for gas demand, the Applicants and the NYSEO submitted evidence pointing to a positive outlook for future gas demand in New York State. TransCanada also pointed to forecasts by the Gas Research Institute, Data Resources Inc. and Foster Associates Inc. which indicated a stronger long-term demand for gas than projected a few years earlier. TransCanada also referred to the list of prospective shippers, who have signed precedent agreements for service on Empire, as evidence of demand for gas. Witnesses for St. Clair and the NYSEO indicated that plans for gas-fired cogeneration, electrical power plant conversions and additions, and the substitution of natural gas for electricity has led to a strong demand in the market area. TransCanada argued that this evidence collectively demonstrated the adequacy of the market and the likelihood that the facilities would be used over their economic life.

TransCanada submitted that gas supplies delivered by the Blackhorse/Empire system would be competitive and pointed to the projected aggregate natural gas demand, and the executed Precedent Agreements for the 5750 $10^3m^3/d$ (203 MMcfd) of long term transportation service on the TransCanada and Empire systems. TransCanada cited the evidence of the NYSEO that the approved and pending pipeline projects and planned capacity additions to serve New York will fall short of meeting the natural gas requirements by 1995-96. TransCanada submitted that it was reasonable to assume that existing U.S. pipeline systems, if they choose to be competitive, will secure additional business given the projected market growth.

IPAC argued that potential competition from other competing gas pipelines was a matter of conjecture. IPAC submitted that the only reasonable alternate means of transportation to the market served by Empire would be a Tennessee interconnection at Niagara, as well as existing Tennessee and CNG facilities coming up from the southern part of the U.S.. IPAC argued that Canadian producers and marketers were well able to meet any competition from these sources. IPAC added that it was unreasonable to consider the Iroquois alternative as a potential competitor to the Blackhorse/Empire Pipeline.

Discussion of Iroquois as an alternative was advanced by CNG which noted that some parties may have taken certain regulatory steps to provide the necessary interconnection to Iroquois.

TransCanada submitted incremental capital cost estimates associated with the suggested Iroquois routing relative to the Blackhorse Extension, which showed that, based upon a throughput of 5751 $10^3m^3/d$ (203.0 MMcfd), facility costs in Canada would be higher by $98.5 million. Assuming the same throughput volume, TransCanada estimated the total Canadian and U.S. incremental costs to be $34.8 million given that Empire would not be constructed. ANR cited TransCanada's evidence which showed that at a 18 413 $10^3m^3/d$ (650.0 MMcfd) throughput level, the Iroquois alternative would require $130 million in additional Canadian facilities over and above the cost of the Blackhorse/Empire facilities, plus an additional $120 million in additional U.S. facilities.

The Applicants concluded that the Blackhorse/Empire system is the most rational and efficient means of accessing the upstate New York market. They noted however, that the two systems Blackhorse/Empire and Iroquois are a complementary means of getting Canadian and U.S.-sourced gas to different parts of the U.S. Northeast market.

TransCanada argued that evidence of an interconnect to an alternative pipeline routing is not a demonstration that the market, the suppliers, or transporters are ready to commit to using that alternative. TransCanada pointed out that in addition to lack of shipper commitment to the Iroquois alternative, Iroquois and the downstream pipelines have not filed applications for the necessary regulatory approvals to either expand or extend their respective facilities to accommodate Empire shippers. TransCanada doubted that these regulatory approvals could be obtained and facilities constructed to provide service commencing 1 November 1993. TransCanada added that it is not up to it to second guess what pipeline systems its shippers, or the market, want to utilize.

The Applicants submitted that the shippers would have to rely on CNG and Tennessee to take gas off the Iroquois system thus continuing their historical reliance on those two pipeline systems and perpetuating the lack of competitive pipeline and gas supply alternatives. They argued that the status quo would be unacceptable to those shippers and to U.S. federal and New York state regulatory authorities and would be to the severe detriment of Canadian gas producers and marketers.

The Applicants further submitted that for most of the market area proposed to be served by the Empire system, transportation service off the Iroquois system is not a viable alternative to the Empire system. They concluded therefore, that Empire will compete with Tennessee, CNG, National Fuel and with other interstate pipeline systems originating from the southern U.S. gas producing areas.

NCO and Sithe/Enron noted that the market does not support Iroquois and should therefore be rejected as a viable alternative to the Blackhorse/Empire system.

CNG argued that the interest expressed by U.S. Generating, NYSEG and Niagara Mohawk in gaining access to the Iroquois system should not be ignored.

Tennessee noted the evidence of Niagara Mohawk that, while it had originally rejected Iroquois at the time it advanced the Gananoque/TransYork system, it was now pursuing Iroquois as an alternative to the Blackhorse/Empire system as a means of accessing Canadian gas supplies.

Respecting evidence on the gas supply contracts associated with the proposed facilities, TransCanada submitted that Kamine Carthage and RG&E met the standard the Board requires for project-specific gas supply in the GH-5-89 proceeding and that Kamine Syracuse filed its long-term gas supply contract with NCM and incorporated its detailed evidence on gas supply into the record. With respect to RG&E's transit volumes, the Applicants argued that the Board should accept as a proxy for long-term gas supply contracts, the existence of long-term storage and firm upstream and downstream transportation contracts which RG&E has arranged. They pointed to the location of the storage, which had access through major gas transmission companies to most of the major supply basins in North America, and suggested that RG&E should have no problem obtaining gas on a competitive basis. As elaborated in Chapter 5, evidence was submitted regarding the transportation arrangements of RG&E, Kamine Carthage and Kamine Syracuse. TransCanada provided evidence respecting the financial integrity of RG&E, a long established LDC serving the city of Rochester and surrounding counties. With respect to Kamine, TransCanada has secured a performance agreement on financial assurances whereby the Kamine cogeneration projects have undertaken to provide a letter of credit for one year of demand charges, prior to the execution of a transportation contract.

Regarding regulatory approvals, the Applicants provided evidence on the current status of approvals in Canada and the U.S. and argued that all approvals have either been obtained or would be obtained. CNG and Grand Island outlined the difficulties which Empire would have in obtaining the required permits from the U.S. Army Corps of Engineers for the wetlands and streams along Empire's 250 kilometre length and argued that minimum delays of 6 to 12 months could jeopardize the November 1993 in-service date. CNG also argued that if the directional drilling of the Chippawa Channel of the Niagara River failed, the use of the conventional method would require Empire to start from scratch from the standpoint of regulatory approvals.

The Applicants stated that the impact of the cost of the Blackhorse facilities on existing tollpayers would be *de minimis* (approximately $0.001/GJ on the Eastern Zone toll).

Views of the Board

The Board is satisfied that the evidence demonstrates that the proposed Blackhorse Extension is economically feasible. There is a strong likelihood that the facilities will be used over their economic life due to the strong natural gas demand in the market area. As well, there is a reasonable expectation that demand charges will be paid. The Board is satisfied that all necessary regulatory approvals will be in place prior to the commencement of construction. The Board is also of the view that although the pipeline would promote gas on gas competition in the market, the gas delivered by the facilities would be competitive. The Board notes that the toll impact on existing shippers would be *de minimis*.

The Board concurs with the parties who have argued that there is currently insufficient market and regulatory support for Iroquois as a viable alternative to the Blackhorse/Empire system. The Board does not believe that the interest expressed in Iroquois to date by U.S. Generating, NYSEG, and Niagara Mohawk will undermine the long-term viability of the Blackhorse/Empire system.

Tolling Matters

11.1 Tolling Methodology

In its evidence, TransCanada outlined the following two possible tolling methodologies for shippers using the Blackhorse Extension:

(1) a rolled-in, point-to-point toll for the Blackhorse Extension ("rolled-in tolls"); and

(2) a rolled-in, point-to-point toll to where the Blackhorse Extension takes off the mainline and then an additional incremental toll for the Blackhorse Extension ("incremental tolls").

During the proceedings, the Board sought the views of the Applicants on the following two additional tolling methodologies:

(3) stand-alone tolls, whereby a separate rate base would be established for Blackhorse with all of its present and future costs rolled into that separate rate base ("stand-alone tolls"); and

(4) rolled-in tolling with a surcharge for the Blackhorse shippers equal to the difference in the estimated costs of constructing the Blackhorse Extension and expanding the Niagara Line.

TransCanada argued in favour of alternative (1), rolled-in tolls, for the Blackhorse Extension and indicated that, in its view, alternatives (2) through (4) were simply variations of incremental tolling. TransCanada noted that the issue of rolled-in versus different forms of incremental tolling has been examined by the Board in past hearings, including the GH-5-89 proceeding, during which the Board decided on rolled-in tolling. TransCanada cited the following reasons which, in its view, justify rolled-in tolling for the Blackhorse Extension:

- The Blackhorse Extension is not distinguishable from other laterals on the TransCanada system and should be tolled on the same basis as all other laterals.

- The Blackhorse Extension will serve multiple customers, just as other laterals do.

- Domestic and export laterals should receive the same tolling treatment. TransCanada stated that the country of origin or destination of gas cannot justify a different tolling treatment under Chapter 9, Sections 903 to 906, of the Free Trade Agreement.

- The Blackhorse Extension will not be used to provide a custom service. It will be used to provide standard firm and interruptible service, as is offered on TransCanada's system as a whole.

- The facilities in the application provide an enhanced level of system security by virtue of the facilities which will be added between St. Clair and the junction of the Niagara Line, and the Blackhorse Extension. The Blackhorse Extension itself provides an alternate delivery point into the U.S.

- The Blackhorse Extension will provide other firm service customers with an additional access point to facilitate the diversion or assignment of firm service space to a secondary market, thereby enhancing the value of their firm service entitlements.

- None of the three conditions under which an incremental toll might be appropriate are present in the application namely that: there is no proposal to treat all laterals in the same non-discriminatory manner by tolling them all incrementally; Blackhorse is not a short lateral built exclusively for a single customer or plant; and, the Blackhorse Extension does not provide a custom service.

- Under incremental tolls, depending on the vagaries of timing, future customers could be assessed substantially lower tolls at the expense of the previous customers.

- The application of a surcharge for the Blackhorse Extension requires the determination of notional facilities for an alternative that is only theoretical in nature. The determination of the costs of notional facilities can be somewhat subjective and can lead to the determination of a less accurate toll. TransCanada does not believe that it is appropriate to set tolls on the basis of notional costs.

- Given the relatively small capital cost of this lateral, the tolling impact on other users is negligible (approximately $0.001/GJ on the Eastern Zone toll). While the level of toll impact on existing tollpayers is not determinative of the proper tolling methodology, TransCanada argued that a *de minimis* impact on existing tollpayers, given other factors supporting rolled-in tolling, strengthens the argument for rolled-in tolls.

- Industry confidence in consistent regulatory treatment would be undermined if the Board were to depart from its precedent for rolled-in tolling when the service in question has not been shown to be unique.

TransCanada's position on rolled-in tolls was supported by ANR, RG&E, St. Clair, IPAC, Consumers', Gaz Métropolitain, inc. ("GMi"), NYSEG, NCO, Sithe/Enron, APMC, and the Procureur général du Québec ("Québec").

ANR argued that incremental tolls for the Blackhorse Extension could limit the use of the Extension and reduce the netback of producers whose gas is transported by the Blackhorse Extension.

A fundamental objection that IPAC had to any tolling methodology other than rolled-in tolls for the proposed facilities was that the Blackhorse Extension would be singled out among all of TransCanada's laterals for different tolling treatment. IPAC argued that if the Board were to decide to implement a toll methodology other than rolled-in tolls for the Blackhorse Extension, fairness and equity would dictate that the tolling methodologies for other laterals of the TransCanada system should be re-examined. Similarly, Sithe/Enron expressed concern about revisiting the issue of rolled-in versus incremental tolls and argued that deciding against rolled-in tolls would be severely prejudicial to private investors who have expended large sums of money developing projects with the expectation that the existing tolling rules will be continued.

Consumers' noted that the benefits to TransCanada's existing shippers from the Blackhorse facilities would likely be commensurate with the expected increase in rolled-in tolls. Under these circumstances, Consumers' argued that rolled-in tolls are appropriate. TransCanada cautioned the Board against relying on a balance of costs and benefits as has been done for some cases before the FERC. TransCanada reiterated that the Board should continue to make toll decisions based on Canadian practice and principles.

In GMi's view, if the Board believes that TransCanada's project is deficient or inferior to some other means of satisfying the market, the Board should deny TransCanada's application or direct TransCanada to modify it. The longstanding principle of rolled-in tolls should not be sacrificed in order to "fix" a defective application. GMi argued that rolled-in tollmaking should be maintained to ensure that the clarity and certainty of the present tollmaking rules is maintained.

NCO argued that an integrated system must be one that takes gas from a supply source to a market, and it would be inappropriate for the Board to adopt a piecemeal approach to the TransCanada system by using different toll methodologies for different segments of pipeline. Québec also emphasized that the Blackhorse Extension would be part of TransCanada's integrated system and would provide the same service as other laterals.

CNG took the position that the proposed facilities should be tolled incrementally. CNG argued that it is the U.S. transit volumes, and not the long-haul Canadian supplies, which cause the projected low load factor for the Blackhorse Extension. In CNG's view, the nature of the service for the transit gas is different from TransCanada's long-haul service. CNG argued that the projected low utilization is an indication that the facilities are not planned as part of the integrated development of TransCanada's system, and therefore, TransCanada's Eastern Zone tollpayers should not pay even minimally higher tolls. CNG also cited the following considerations in support of incremental tolls: the facilities are not supported in the evidence as significantly enhancing TransCanada's overall system reliability or flexibility; U.S. volumes will compete with Canadian gas for markets on Empire, with primarily Canadian shippers bearing the subsidy cost of the underutilized facilities; and, according to TransCanada's witness, incremental tolling is technically and administratively feasible.

In reply argument, TransCanada noted that CNG's argument would lead to the attribution of certain costs to certain volumes, when no such parallel argument of cost-causation has been adopted by the Board for facilities other than those related to delivery pressure. TransCanada also argued that CNG's concern about a subsidy being paid by Canadian shippers implies that existing shippers have vested rights in the system and ignores the long approved practice of shippers sharing system costs and benefits.

Mr. Rempel indicated that the Blackhorse Extension should be tolled incrementally so that Canadian gas consumers and industries do not end up bearing the cost burden for natural gas exports. He argued that Canadian gas producers must use the Canadian gas transportation system and therefore, have a responsibility to the system, whereas the U.S. producers use the Canadian system only when it is convenient for them. Mr. Rempel urged TransCanada to take this factor into account when implementing a toll methodology.

The Industrial Gas Users Association ("IGUA") also opposed rolled-in tolls for the Blackhorse Extension. IGUA took the position that the costs of providing capacity to carry traffic to a new and regionally distant market area through the Blackhorse Extension ought to be recovered from traffic destined to that market area. It advocated the market-segregated, rolled-in methodology it had advocated in the GH-5-89 proceedings. However, IGUA did not seek to incorporate its GH-5-89 evidence into the hearing record and did not actively participate in the proceedings for either GH-1-91 or GH-R-1-92.

Views of the Board

In order to determine whether rolled-in tolls would be appropriate for the proposed Blackhorse Extension, the Board had regard to two factors. First, the Board considered the degree to which the Blackhorse Extension would be integrated with the rest of TransCanada's system. Second, the Board examined the nature of the service to be provided by the proposed facilities in relation to the service provided by the rest of TransCanada's system.

The issue to be considered with regard to integration is the extent to which the Blackhorse facilities would be physically integrated with the rest of TransCanada's system. While not all TransCanada shippers are likely to use the Blackhorse Extension, any shipper who wished to reach the New York market could use the Extension, subject to capacity constraints. Furthermore, all shippers who use the Blackhorse Extension must also use some other part of TransCanada's system. The Blackhorse facilities could not be used in isolation. In addition, the facilities would in all likelihood be available for other shippers to use for diversions, assignments or interruptible service. Therefore, the Board is of the view that the Blackhorse Extension will form part of TransCanada's integrated gas transmission system.

Regarding the second factor, the Board agrees with TransCanada and other parties who argued that the service would be the same as that available on the rest of TransCanada's system, that is, firm and interruptible gas transmission service for multiple system users. The Blackhorse Extension would provide a standard service rather than a custom service.

In conclusion, the Board is satisfied that the Blackhorse Extension will form part of TransCanada's integrated system and will provide a similar service to that provided on the rest of the TransCanada system. In the Board's view, the costs of any portion of an integrated pipeline system, which is jointly used by many shippers and which provides a standard service, should be shared by all system users through rolled-in tolls. Rolled-in tolls reflect the facts that all shippers cause costs on the system and that all shippers also share the benefits of the integrated system. In such instances, rolled-in tolls send the correct market signals to shippers with respect to the cost of providing the service.

Decision

The Board has approved a rolled-in tolling methodology for the Blackhorse Extension.

11.2 Capacity Assignment

As described in section 6.1, TransCanada requested the Board's approval of increased firm transportation entitlements of 4433 10^3m/d (156.5 MMcfd) on Union's system, contemplated by the assignment of RG&E's 2875 10^3m^3/d (101.5 MMcfd) contracted capacity on the Union system to TransCanada and the M-12 Agreement between TransCanada and Union for 1558 10^3m^3/d (55.0 MMcfd). These entitlements on the Union system correspond to the volumes in RG&E's contracts with TransCanada for firm service from St. Clair to Chippawa commencing 1 November 1993.

TransCanada took the position that the assignment of the capacity on the Union system is entirely appropriate and should be treated no differently than any other case where TransCanada contracts directly with Union for M-12 capacity to provide an integrated service to its customers.

At the time that RG&E amended its request for service from TransCanada's interconnect with Great Lakes at St. Clair to Chippawa, TransCanada could not commit to RG&E, with assurance, that it could obtain the necessary additional Union M-12 capacity to meet RG&E's requirements. However, RG&E was high enough in Union's queue that the necessary Union space was available and it was then assigned to TransCanada. The assignment of RG&E's capacity on Union would provide a means to link TransCanada's upstream and downstream facilities, thus enabling TransCanada to provide an integrated service to RG&E.

TransCanada submitted that RG&E requested this integrated service, which TransCanada provides to others, and would prefer to provide in this case. TransCanada further argued that the service requested by RG&E is no different than the service proposed for Tennessee that was approved in the GH-4-91 proceeding.

CNG argued that with rolled-in tolls, TransCanada would under-recover the incremental cost of service of these facilities with the consequence that all of TransCanada's shippers would help pay for the transportation of RG&E's short-haul transit volumes. CNG further submitted that the assignment of RG&E's volumes is discriminatory because TransCanada requires other Eastern Zone tollpayers, such as GMi, to secure their own capacity on Union to make use of services unique to the Union system.

GMi questioned why TransCanada's tollpayers should assume any risk for RG&E's capacity on Union when GMi and certain other Canadian distributors must contract directly with Union for firm transportation, thereby directly assuming financial risk and contractual responsibility. GMi recommended that, if the Board decides to reverse its previous Decision and approve the Blackhorse Extension, RG&E should be directed to contract its own capacity on Union, and assume the risks and costs associated with that contract.

The APMC argued that although TransCanada will have the opportunity to use RG&E's firm entitlement on the Union system for interruptible service on days when RG&E is not taking its firm entitlement, this service provides RG&E with a benefit at the expense of the other TransCanada system users. The APMC submitted that "this integrated service" should be considered as a new service and that the Board should review it in a future tolls case and prescribe an appropriate toll. It was the opinion of the AMPC that this is particularly relevant in light of TransCanada's stated intention of offering this service to others, and the intention of others to take TransCanada up on its offer.

Views of the Board

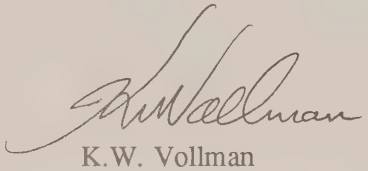
In the Board's view there is nothing to distinguish the M-12 firm transportation TransCanada has acquired on the Union system, whether through assignment or direct contract, from existing integrated services being provided to domestic and export shippers. Accordingly, the Board is of the opinion that the costs associated with the M-12 service should be recovered through rolled-in tolls. The Board does not agree with APMC that this is a new service or that the Board should review it at a future rate case and prescribe an appropriate toll.

Decision

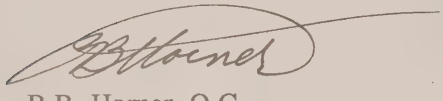
The costs associated with M-12 capacity on Union shall be recovered through rolled-in tolls.

Disposition

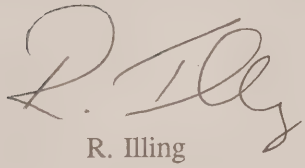
The foregoing Chapters constitute our Decision and Reasons for Decision in respect of the applications heard before the Board in the GH-R-1-92 proceedings. The Board has found that there are changed circumstances and new facts since the GH-1-91 Decision on this matter which warrant setting aside that Decision. The Board has also found that the proposed facilities are and will be in the present and future public convenience and necessity. The order granting approval of the facilities is found in Appendix II.



K.W. Vollman
Presiding Member



R.B. Horner, Q.C.
Member



R. Illing
Member

List of Issues

Economic Feasibility

1. The likelihood that facilities will be used at a reasonable level over their economic life and that associated demand charges will be paid, having regard to, *inter alia:*

   - the existence and adequacy of long-term gas supplies to support the existing and applied-for facilities;

   - evidence on the long-term outlook for gas demand in the market region to be served;

   - evidence on the potential competition to the gas supplies delivered via TransCanada's system from competing gas transportation systems;

   - evidence on the gas contracts associated with the proposed facilities including:

     (i) evidence that the demand charges will be paid;

     (ii) evidence as to the project-specific supply for the proposed expansion;

     (iii) evidence that gas transportation arrangements exist or will exist both upstream and downstream of the TransCanada system; and

     (iv) evidence that all appropriate regulatory approvals in both Canada and the United States will be in place prior to construction of the applied-for facilities; and

   - evidence on the financial integrity of the Applicant and parties to the gas contracts associated with the proposed facilities.

Technical Issues

2. The feasibility and potential use of various construction techniques, including directional drilling, to minimize environmental impacts.

3. The appropriate design of the proposed facilities and the consistency of that design with the long-term requirements.

General Routing

4. The appropriateness of the specific route proposed for the Blackhorse Extension.

5. Alternative routes within TransCanada's general study area including, but not limited to, those identified by TransCanada.

Route Selection Methodology

6. The adequacy of TransCanada's route selection criteria and methodology.

Environmental

7. The potential environmental impacts associated with the proposed pipeline construction on agricultural lands and wooded areas.

8. The potential environmental impacts of the proposed pipeline crossing of watercourse and wetlands, in particular, the Niagara River (Chippawa Channel), the Welland River and Lyons Creek.

Tolling Methodology

9. The appropriate tolling methodology to be applied to the proposed Blackhorse Extension.

9A. The appropriateness of the capacity assignment agreement between Union and TransCanada for the Empire volumes.

Terms and Conditions

10. The appropriate terms and conditions to be included in any certificate or order that may be issued.

Alternative Proposals

11. In addition to examining Issues 1 to 10 above as they relate to the proposed Blackhorse Extension, the Board will also examine the economic, environmental and other aspects of the alternative means of accessing the U.S. market targeted by the Blackhorse Extension. (For greater clarity, it is not the Board's intention to hear detailed evidence on the United States portion of any facilities except to the extent of proving that they are a viable means of transporting the volumes supporting this application to the market to be served.)

Review

12. Whether the Board should overturn its decision in GH-1-91 to deny the application.

ORDER XG-23-92

IN THE MATTER OF the *National Energy Board Act* ("the Act") and the regulations made thereunder;

AND IN THE MATTER OF an application dated 20 July 1989, as amended, by TransCanada PipeLines Limited ("TransCanada") under section 58 of the Act for certain proposed facilities known as the Blackhorse Extension, filed with the Board under File No. 3400-T001-52;

AND IN THE MATTER OF an application filed under section 21 of the Act by TransCanada, ANR Pipeline Company, Rochester Gas and Electric Corporation and St. Clair Pipelines Ltd. ("the Applicants") requesting a review of the denial of the applied-for facilities;

AND IN THE MATTER OF Hearing Order GH-R-1-92.

BEFORE the Board on 17 June 1992

WHEREAS the Board received an application from TransCanada dated 20 July 1989 respecting certain facilities to be added to its pipeline system known as the "Blackhorse Extension";

AND WHEREAS the Board issued Hearing Order GH-1-91 setting down the application for the Blackhorse Extension for hearing;

AND WHEREAS a public hearing was held in the cities of Niagara Falls and Ottawa, Ontario on 22 to 26 April, and 6 May 1991;

AND WHEREAS the Board denied the application by TransCanada for the Blackhorse Extension;

AND WHEREAS the Applicants filed an application, pursuant to section 21 of the Act, for a review of the denial of the Blackhorse Extension facilities on 2 August 1991;

AND WHEREAS the Board decided that there were changed circumstances and new facts which warranted a review of the GH-1-91 Decision;

AND WHEREAS the Board decided to review the decision in GH-1-91 in an oral proceeding;

AND WHEREAS a public hearing was held pursuant to Hearing Order GH-R-1-92 in the cities of Niagara Falls, Ontario and Calgary, Alberta on 11 to 14 and 20 and 21 May at which the Board heard the Applicants and all interested parties;

AND WHEREAS the Board has decided that changed circumstances and new facts warrant setting aside its Decision in GH-1-91;

AND WHEREAS pursuant to the *Environmental Assessment and Review Process Guidelines Order* ("EARP Guidelines Order"), the Board has performed an environmental screening and has considered the information submitted by TransCanada and evidence adduced at the hearing;

AND WHEREAS the Board has determined, pursuant to paragraph 12(c) of the EARP Guidelines Order, that the potentially adverse environmental effects, including the social effects directly related to those environmental effects, which may be caused by the proposed facilities, with the exception of trenching the crossing of the Chippawa Channel of the Niagara River, are insignificant or mitigable with known technology;

AND WHEREAS the Board has determined, pursuant to paragraph 12(c) of the EARP Guidelines Order, that the potentially adverse environmental effects, including the social effects directly related to those environmental effects, which may be caused by crossing the Chippawa Channel of the Niagara River by directional drilling are insignificant or mitigable with known technology;

AND WHEREAS pursuant to section 14 of the EARP Guidelines Order, in order to prevent any of the potentially adverse environmental effects, including any social effects directly related to those environmental effects, which may be caused by crossing the Chippawa Channel of the Niagara River by trenching from becoming significant, the Board requires the crossing to be constructed using directional drilling;

AND WHEREAS the Board has examined the application for facilities and considers it to be in the public interest to grant the relief requested;

IT IS ORDERED THAT the facilities listed in Schedule A, attached to and forming part of this Order are exempt from the provisions of paragraph 30(1)(a) and sections 31 and 33 of the Act, subject to the following conditions:

1. The pipeline facilities in respect of which this Order is issued ("the additional facilities") shall be the property of and shall be operated by TransCanada.

2. TransCanada shall, prior to the commencement of construction, file with the Board evidence to demonstrate that it has secured the necessary approvals from all other permitting agencies for the applied-for facilities.

3. (1) TransCanada shall cause the additional facilities to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings, and other information or data set forth in its application, or as otherwise adduced in evidence before the Board and as approved in the GH-R-1-92 Decision, except as varied in accordance with subsection (2) hereof.

(2) TransCanada shall cause no variation to be made to the specifications, drawings or other information of data referred to in subsection (1) without the prior approval of the Board.

4. TransCanada shall implement or cause to be implemented all of the policies, practices, recommendations, and procedures for the protection of the environment included in or referred to in its application, its environmental reports filed as part of its application, its Pipeline Construction Specifications (1990), its Environmental Protection Practices Handbook (1991), and its undertakings given to the Federal Department of Fisheries and Oceans and to member agencies of the Ontario Pipeline Coordination Committee, all as adduced in evidence in the GH-R-1-92 proceedings.

5. (1) Except as provided for in subsection (2) hereof, TransCanada shall, prior to the commencement of construction of the facilities referred to in this Order, demonstrate to the satisfaction of the Board that all required land rights have been obtained along the entire route.

(2) In the event that all required land rights have not been acquired along the route referred to in this Order, any portion or portions of the facilities referred to in this Order may be constructed provided that, prior to commencing construction on any portion of the facilities, TransCanada shall demonstrate to the satisfaction of the Board, that the rights of the landowners, as prescribed in the Act, from whom TransCanada has not yet obtained the required land rights, will not be prejudiced by the construction of that portion of the route.

6. TransCanada shall, at least 10 days prior to the commencement of construction of the additional facilities, file with the Board a detailed construction schedule or schedules identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur.

7. TransCanada shall file with the Board, at least ten days prior to the commencement of construction, the results of the heritage resources surveys referred to in the GH-R-1-92 proceeding, including any corresponding avoidance or mitigative measures.

8. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of the additional facilities, demonstrate to the Board's satisfaction that:

(1) in respect of new firm export and new firm export for re-import volumes, all necessary United States and Canadian federal regulatory approvals, including applicable long-term Canadian export and import for re-export authorizations, have been granted; and

(2) with respect to the transportation of new firm volumes on the TransCanada system:

(a) transportation contracts have been executed;

(b) all necessary United States and Canadian federal regulatory approvals have been granted in respect of any necessary upstream and downstream facilities or transportation services; and

(c) gas supply contracts have been executed.

9. TransCanada shall file with the Board, at least 10 days prior to the commencement of construction, RG&E's gas supply contracts underpinning the initial 4433 $10^3m^3/d$ (156.5 MMcfd) of contracted transportation service on TransCanada.

10. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of any of the approved facilities, submit for Board approval:

(1) requirements tables in the same format as the tables in Appendices 5 and 6 of Tab 6 of Exhibit B-6 from the GH-R-1-92 proceeding, showing the anticipated base case requirements and those requirements for which condition 8 has been satisfied; and

(2) flow schematics of the TransCanada system demonstrating that those approved facilities which are to be released for construction are necessary to transport the requirements referred to in subsection (1).

11. During construction, TransCanada shall file with the Board monthly construction progress and cost reports, in a format to be determined through consultation with Board staff, providing a breakdown, by location and facility, of costs incurred during that month, the percentage completed of each activity and an update of projected costs to complete the project.

12. TransCanada shall, within six months of putting the additional facilities into service, file with the Board a report providing a breakdown of the costs incurred in the construction and Canadian content of the additional facilities in the format used in Appendix 11 of Exhibit B-6, Tab 3 to the GH-R-1-92 proceeding, setting forth actual-versus-estimated costs, including reasons for significant differences from estimates.

13. TransCanada shall maintain for audit purposes at each construction site, a copy of the welding procedures and non-destructive testing procedures used on the project together with all supporting documentation.

14. (1) TransCanada shall file with the Board a post-construction environmental report within six months of the date that the last leave to open is granted for the additional facilities.

(2) The post-construction environmental report referred to in subsection (1) shall set out the environmental issues that have arisen up to the date on which the report is filed and shall:

(a) indicate the issues resolved and those unresolved; and

(b) describe the measures TransCanada proposed to take in respect of the unresolved issues.

(3) TransCanada shall file with the Board, on or before the 31 December that follows each of the first two complete growing seasons after the post-construction environmental report referred to in subsection (1) is filed:

(a) a list of the environmental issues indicated as unresolved in the report and those that have arisen since the report was filed, if any; and

(b) a description of the measures TransCanada proposes to take in respect of any unresolved environmental issue.

15. TransCanada shall file with the Board for approval 30 days prior to construction, a plan for drilling mud disposal. This information should include but not be limited to:

(i) an estimate of the complete composition of the drilling waste including the relative quantities of water, bentonite and other sediments and drill cuttings; and any additives which may be necessary during construction, or to allow for flocculation prior to disposal;

(ii) documentation indicating that TransCanada has an agreement in place with a waste disposal facility to dispose of drilling waste solids in the event that land filling of solids is proposed;

(iii) documentation indicating that TransCanada has the agreement of the landowner, where disposal on private land is proposed; and

(iv) a discussion of potentially adverse environmental effects and proposed mitigation for the proposed method of disposal.

16. TransCanada shall file with the Board, 10 days prior to the disposal of any drilling waste, all information which was required for TransCanada to meet all of the relevant requirements/guidelines of the Ontario Ministry of Natural Resources and the Ontario Ministry of the Environment.

17. TransCanada shall file with the Board, 10 days prior to the first disposal of drilling wastes, and every two weeks thereafter until the directional drill is completed, data analysis indicating the complete chemical composition of both the solid and liquid portions of the drilling waste to be disposed of, and plans for any necessary mitigation, specific to that chemical composition.

Should any additives to the drilling fluids be required at any time during construction, TransCanada shall immediately advise the Board as to the nature and composition of the additives.

18. TransCanada shall submit to the Board a post construction report which details any problems encountered during the directional drilling activities and solutions which were taken. This information should include, but not be limited to:

(i) any problems (such as magnetic interference) which were encountered with the accuracy of the steering system;

(ii) any problems encountered with pipe damage;

(iii) any problems encountered with muds exiting to the surface through unconsolidated beds or through abandoned pilot holes;

(iv) any social concerns raised during the course of the drilling activities;

(v) problems encountered with drilling mud containment or disposal; and

(vi) the level of vibration caused by the directional drilling activities, and any damage to structures related to those vibrations.

19. TransCanada shall, at least 10 days prior to the commencement of construction of the additional facilities, file with the Board, a copy of an environmental issues list prepared by TransCanada in accordance with paragraph 28 (1) (a) of the Board's *Onshore Pipeline Regulations* and, if any additional issues arise during construction, file an updated issues list in accordance with subsection 28 (2) of the *Onshore Pipelines Regulation* and shall take appropriate action to resolve those issues.

20. At least 10 days prior to the commencement of construction, TransCanada shall file with the Board a copy of the technical agreement between TransCanada and ANR Pipeline Company regarding the crossing of the Chippawa Channel of the Niagara River.

21 Unless the Board otherwise directs, TransCanada shall cause the construction and installation of each of the additional facilities, herein referred to, to be commenced on or before 31 December 1994.

NATIONAL ENERGY BOARD

J.S. Richardson
Secretary

Schedule A

Blackhorse Extension

Description	Estimated Cost (1992 base, $000s)
Pipeline:	
20.6 km of 610 mm pipe from MLV 1701 to U.S. Border	23 884
Compressor:	
6.3 MW compressor unit at Station 1301	13 127
Metering:	
2-NPS 12 meter runs at Chippawa, Ontario	2 047
Total Capital Cost	39 058

XG-23-92

TransCanada's Undertakings to the Ontario Pipeline Coordination Committee and its Member Agencies

Ontario Pipeline Coordination Committee

TransCanada will undertake the following:

1. to prepare a detailed archaeological evaluation of the final route prior to construction;

2. to avoid archaeological sites during construction, but, if avoidance is not possible, excavate all known sites which would be affected by construction;

3. to produce a report which documents the results of the detailed archaeology field survey and any excavations undertaken;

4. to advise the Chairperson of the Ontario Pipeline Coordination Committee of the name of the Construction Supervisor and the field Environmental Inspector, 10 days prior to construction;

5. to notify the local Ontario Ministry of Environment, Ministry of Natural Resources and the Chairperson of the OPCC of the date and location of the environmental seminar to be held for construction and supervisory personnel; and

6. to provide the Chairperson of the OPCC, copies of all Post-Construction and As-Built reports for information.

Ontario Ministry of Natural Resources

1. TransCanada PipeLines shall obtain and adhere to OMNR authorization, which may be in the form of a work permit, for all construction at watercourses, unless OMNR determines that such authorization is not required. TransCanada shall apply for such authorization no less than 45 days prior to construction.

   TransCanada will comply with any restrictions placed on the timing and methods of site preparation and construction activities.

2. TransCanada will provide construction and post construction stormwater management plans and long term maintenance plans including measures to address any potential failures. The purpose of these plans is to ensure that waters do not pool in the right-of-way and contaminate the watercourse.

3. TransCanada will notify the local office of OMNR of the date, time and place of the environmental seminar conducted for the on site supervisory construction personnel and give 24 hours notice of construction at each water crossing.

4. Should OMNR be of the opinion that destruction of fisheries habitat will occur as a result of the intended actions of TransCanada, OMNR will inform the Department of Fisheries and Oceans (DFO). DFO must approve any habitat destruction and associated compensation prior to construction.

Ontario Ministry of the Environment

1. Where open water disposal of dredged material is planned and where sediment contamination is suspected, sediment analysis is to be conducted to determine if the material will met the Ontario Ministry of Environment's requirements for open water disposal as set out in the 1984 Guidelines for Construction of Hydrocarbon Transmission and Distribution Pipelines Crossing Watercourses;

2. Where dredged material cannot meet the Ontario Ministry of the Environment's requirements for open water disposal, the materials are to be placed above the high water mark and stabilized to avoid re-entry into the watercourse. These materials will be disposed of on land at a location agreed to with the Ministry;

3. Water intakes and water supplies are to be protected or municipalities/industries informed when, and if, dredging will take place. Where water supplies are disrupted, alternative temporary or permanent sources are to be supplied by TransCanada;

4. Water quality control for the Welland River, Lyons Creek, Tea Creek and some of the larger tributaries, must be implemented. Ussher's Creek in particular is noteworthy for its fishery and warrants specific care.

   Sediments should be collected as cores to the depth of excavation, with the top 30 cm analyzed separately from the balance of the core addressing those parameters. These parameters should not exceed the permissable level identified in Table 1 of Ministry of the Environment Draft "Guidelines for the Management of Dredged Material in Ontario".

   Ministry of the Environment recommends six (6) equally spaced sampling sites across the Welland River, with half of the sites in the Marsh and similarly four (4) sites on Lyons Creek, three (3) on each Ussher's and Tea Creek. Collected data from the above identified locations will determine whether the smaller streams should also be sampled. If further details are needed relative to sediment sampling or interpretation, please contact Mr. Archie McLarty, Regional Biologist, Hamilton (416-521-7702).

5. TransCanada will undertake an assessment of potential noise and dust impacts as a result of construction and identify mitigation measures, where necessary; and

6. TransCanada will notify the local office of Ministry of the Environment of the environmental seminar to be held for supervisory construction personnel.

TransCanada's Criteria for Evaluation of Alternative Routes

1. Maximize the distance along which an existing right-of-way can be paralleled and immediately adjacent.

2. Minimize the distance of new non-adjacent right-of-way required.

3. Maximize the distance along an existing right-of-way which can be used for temporary work room.

4. Minimize distance which has saturated silts and sands within the right-of-way.

5. Minimize distance through wetland/organic soils/muck.

6. Minimize impacts on forest resources, including farm woodlots.

7. Minimize impacts on environmentally sensitive areas potentially affected by the route.

8. Minimize the number of streams crossed:
   - non-sensitive (Warm Water).

9. Minimize number of major river crossings.

10. Minimize number of road crossings, particularly provincial highways and paved roads.

11. Minimize distance adjacent to poultry farms or other sensitive livestock operations.

12. Maximize distance through idle lands.

13. Minimize distance through specialty croplands especially those supporting perennial crops, such as orchards, vineyards and ginseng.

14. Avoid or minimize distance through other land uses such as:
   - dense residential development;
   - areas of urban encroachment;
   - intensively used recreational areas;
   - industrial areas (although this can be considered as a positive benefit as well);
   - areas having pits or quarries;
   - areas having significant archaeological potential; and
   - areas in which future development is known to be planned.

15. Avoid lands of special status such as parks, cemeteries and Indian Reserves, designated historic sites.

16. Minimize impact to water supply systems and groundwater resources.

17. Maximize distance along which the proposed right-of-way will follow the land fabric and geometry of the landscape.

18. Minimize impacts on potentially affected wildlife habitat such as:

    - deer yards;
    - significant over-wintering areas;
    - areas where rare and endangered species are reported to occur.